AMERICAN

Journal of Mining,

Engineering, Geology, Mineralogy, Metallurgy, Chemistry, etc.

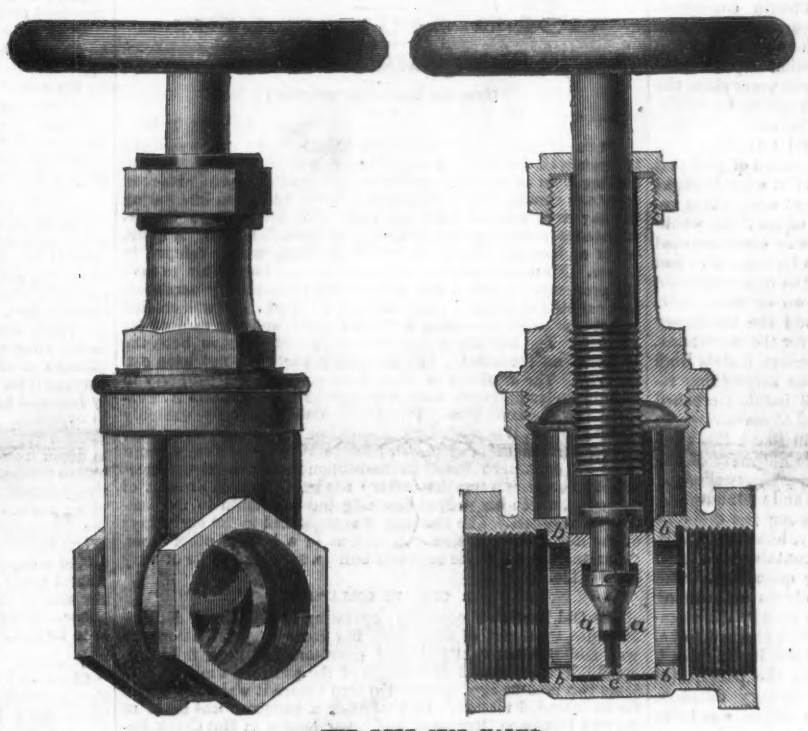
VOLUME V.—Number 19.
New Series.

NEW YORK, MAY 9, 1868.

$4 A Year in Advance.
Single Copies Ten Cents.

THE PEET STOP VALVE.

The superior excellence of this valve induces us to allude a second time to its mechanism. We illustrate it by new cuts that represent the arrangement more fully than those pre viously inserted. The general structure consists of a pair of sliding disk-plates, a, a, accurately fitted to two flat seats, b, b, in the sides of the valve. These disks are suspended and hang loosely on the collar, e, on the stem. The end of the stem, d, is a conical wedge; when the disks strike the elevated bar, c, in the bottom of the shell, this wedge is forced by the screw and hand-wheel between them, which presses them asunder, and thus drives each home on its seat, forming two joints. At this point a slight turn of the wheel closes the valve *perfectly;* with a slight reverse of the hand-wheel, it is entirely freed and opens without friction or resistance. This valve is equally effective against the pressure from either way, and any pressure which tends to open one side closes the other. It has two joints, which make it twice as effective and more than twice as durable as any single-jointed valve. For instance, a single particle of dust in the seat of a single-jointed valve causes a leak; a few hours make that leak a permanent one. A single grain of dust in one seat of the Peet valve would not cause a leak without the remarkable coincidence of another particle at the same time on the other seat. This valve can always be packed under pressure of steam or water; it is machine-made throughout, every part being interchangeable, and made of the best steam metal. The joints of this valve evidently are not affected by expansion or contraction, since any change of size in the disk or seat would simply cause a slight motion in no way influencing the joint. The joints being again at right-angles to the current passing through, are not exposed to any filing action, as where the fluid travels across the valve-face. The disks can be duplicated at a trifling cost, and, the valve-faces and seats being *flat*, can always be *perfectly* repaired. Being perfectly symmetrical, either end may be an *inlet*, and its shell is capable of resisting all ordinary strain. At the last meeting of the Franklin Institute in Philadelphia, this Stop-valve was exhibited as being the only one of an efficient character yet furnished, that gives a straight and unobstructed passage to the flow of steam, water, or gas, which it controls. Owing to the great demand for these valves from Austria, Russia, and other parts of Europe, Mr. S. J. Peet goes to England next month in order to make arrangements with parties to manufacture on royalty. The valves are made in this country by the American Tool and Machine Company, 45 Kingston street, Boston, Mass.



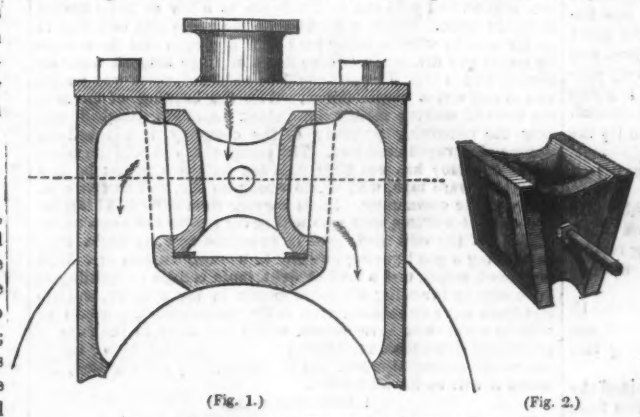
THE PEET STOP VALVE

Champagne from Petroleum.

It is no longer a secret of the chemist's laboratory, that clear golden syrups can be made from starch and sulphuric acid; that delicious wines and brandies can be made from beet-root; that a barrel of peanuts can be transformed into excellent coffee; that lard can absorb an enormous quantity of water in certain conditions; that, in fact, there seems no limit to the adulterations that an intelligent and dishonest chemist can practice upon his fellow-men. All these marvels of chemical science have in these latter days become degraded into mere tricks of trade, and their chief beauty is in their capacity to enable unscrupulous dealers to lighten the pockets and destroy the stomachs of the confiding and consuming public. Concerning the article of champagne, a writer in the Cincinnati *Journal of Commerce* tells us that it is made from a thousand different substances, even from refined petroleum. Yes, from the fiery benzole a sparkling, bubbling, foaming champagne can be produced, which will delight the eye, tickle the palate, gladden the heart momentarily, but quicken our paces toward the graveyard. This is a new use for petroleum, which those who have been experimenting with it as an agency for generating steam have little dreamed of. Who can say that the Pennsylvania oil territory, now considered mostly worthless, may not some day be regenerated into the great champagne-producing country of the world?—*British Medical Journal.*

BALANCED SLIDE VALVE.

The annexed engravings represent an outside perspective view and a transverse section of a slide-valve for admitting steam to a steam-engine cylinder. Many devices have been invented and used for this purpose, but finally abandoned as impracticable, uneconomical and useless. Circular poppet-valves which are raised and lowered by "toes," and slide valves known as long and short D valves, are the mechanism now generally used in connection with steam-engine cylinders. The objection usually raised against the slide-valve is the enormous absorption of power, or in other words, the pressure of the steam on the back of the valve being great, causes an immense amount of friction between the valve-seat and valve face, when the latter is in motion. The friction of cast-iron sliding on cast-iron, unlubricated, according to RENNIE'S experiments, is 1.5 of the weight up to 100 pounds pressure per square inch. From this estimate it can be readily calculated what amount of work is expended, in merely moving the valve over the face to let the steam in and out. In the engravings we have a representation of a new method of balancing a slide-valve, and of avoiding the objection alluded to by a very simple and practicable arrangement without any springs, gears, steam-tight joints, or levers. Two valves are joined together at the back, as shown in Fig. 2, and the ports are made double, so that there are two valves and two valve-faces in the chest instead of one, as generally used. These ports are constructed as shown in the transverse or cross section Fig. 1. The steam passes between the two valves, as represented by the arrow, and, pressing equally against both sides, causes the valves to work freely, and yet steam-tight, against the face. The friction is so slight upon this description of valve, that it will work for many months without any perceptible wear. These balanced slide valves can be constructed to suit any length of steam-chest or any size of steam-cylinder, used in marine, locomotive, and stationary steam-engines. Over fifty engines with cylinders from 24 to 7 inches, diameter, are now running with these valves, and all engineers who have tried them testify to their successful operation, and the satisfaction they find in using them. Eight patents, covering this valve and improvements on the same, are owned by the UNION STEAM VALVE COMPANY, 96 Washington street, Boston, Mass. Two of the named letters patent were recently granted to J. S. BARDEN, and also two to CHARLES WHITTIER, of the firm of CAMPBELL, WHITTIER & Co., Boston, Massachusetts, who, besides some other companies, are manufacturing these balance slide valves under license.



(Fig. 1.) (Fig. 2.)

BALANCED SLIDE VALVE.

Formation of the Bed of the British Seas.

M. Delesse last week laid before the French Academy of Sciences a large map of the various beds and rocks constituting the bottom of the British seas. This bottom chiefly consists of sand, slime, more or less mixed with the latter, and different stones. The latter, already consolidated, are anterior to the present period, and do not receive deposits. They stretch far into the sea from the northwest coasts of Scotland, the Orkneys, and the Hebrides; they also exist at the mouth of the Shannon and the northwest coast of Ireland. In the British channel they mark the junction of Cornwall with Brittany; they also mark those of the Isle of Wight and Portland with the continent. To the east of England these stony formations are hardly to be met with elsewhere than at the mouth of the Tees and in the direction of Cape Flamborough. They generally form the bottom of the straits and friths that are washed by rapid currents. Shifting deposits are larger in proportion to the rapidity of the waters that have borne them. The most important consist of sand, which occupies immense space on the Atlantic coast, the Bristol channel, and the German sea. Gravel deposits, which are not extensive, are to be found on the western coasts, in the Bristol channel, between the Land's End and the Scilly Islands, and south of Cork. Flint shingle borders the white cliffs of England, but is also met with in the German sea in the latitude of the Orkneys. Slimy deposits are peculiar to the mouth of the Thames, Southampton Water, Torbay, and the Irish coast of St. George's channel. As various points of the coasts there are marine deposits of mollusks and shellfish. They are somewhat rare on the eastern coast of England and the southern one of Ireland, but very frequent in the Irish sea, and all round Scotland, especially in the Minsh, and between the Orkneys and Moray Frith.—*Galignani.*

Commissioner Taylor's Report.

The Secretary of the Treasury transmitted to the House of Representatives, on Monday, a report by James W. Taylor, special commisioner for the collection of statistics of gold and silver mines and mining, east of the Rocky Mountains, which was referred to the Mining Committee, and ordered to be printed. Besides a general review of the operations of the year 1867 in New Mexico, Colorado, Eastern Montana, Dakota, Minnesota and the gold districts of the Alleghany range, this report refers to the mining interests of the British territories, especially to the new discoveries on Lake Superior and at Madoc. A full account of the Nova Scotia gold field is added. Among other topics, prominence is given to the probabilities of increasing the water supply of the western plains by means of Artesian wells, the recent discoveries of coal along the eastern base of the Rocky Mountains, and the most practicable means of reducing the oppressive rates of transportation, west of the Rocky Mountains. This last discussion, he says, brings for

ward the necessity of a national railroad system through the Northern and Southern as well as the central tier of Western States and territories. It is understood that the Secretary of the Treasury has continued the mining commission of the department, directing a special inquiry into the best methods for the economical reduction of the obstinate sulphurets which have hitherto obstructed the economical reduction of the gold-bearing rock.

A Final Verdict on the Black Rock Mines.

From the Virginia City (Nevada) Enterprise.

The history of actual and purported mineral discoveries upon this Pacific coast will contain no chapter more curious than that relating to the so-called Black Rock mines. It will illustrate a pre-existing disposition to believe in everything bordering on the marvellous, even in the matter-of-fact business of mining; the ease with which popular credulity may be wrought upon by sanguine ignorance or cunning knavery, and the tenacity with which the public mind clings to a novel idea long after it has been proved a delusion and a humbug. The existence of a peculiar mineral formation, in the Black Rock region, has been known since the days of the earliest California immigration, and, from time to time, there have been rumors that ores of fabulous richness were found scattered about that vicinity by emigrants, of whom all traces have invariably been lost. The very vagueness of these reports was calculated to stimulate belief, for stories which would be scouted as improbable if exactly located and retailed upon definite authority, readily obtain a greater or less degree of credence when their authenticity is accorded a sufficient amount of doubt, and their location given a reasonable uncertainty of latitude. The term Black Rock designated a vast expanse of unexplored territory. A dozen El Dorados might exist within its boundaries. There was nothing to limit the scope of imagination in conjecturing the riches therein contained. Never was there a finer vein of pre-disposed credulity for shrewdness to work upon, than existed in the popular mind in relation to Black Rock, and never was a similar deposit more skilfully worked. It is now some two or three years since the mining community was startled from its propriety by intelligence of the discovery that all the hills and mountains of that region, characterized by the peculiar mineral formation from which it derived its name, were a vast aggregation of gold and silver ore of incalculable richness. Tons of it were brought to Washoe Valley for reduction, and the most astonishing results obtained. Crowds rushed to the new mines; the whole country was speedily located, and a person was commiserated as having lost the only certain prospect of a fortune, who had not obtained "feet" in Black Rock. Thus the rage continued for a couple of years, during which period two or three mills were erected in the vicinity of the mines, and the machinery for several others started thitherward from over the mountains. But the mills could obtain no traces of precious metals from the ore, and, notwithstanding that the same astonishing results as ever were produced from the small batches crushed under the supervision of a certain individual at certain works in Washoe Valley, the universal confidence in Black Rock exhibited a tendency towards weakening. The notoriety of the mines and the perplexing enigma they presented, challenged the attention of numerous assayers, chemists and metallurgists, who only augmented the mystery by pronouncing different opinions. The bulk of scientific testimony, however, finally preponderated on the side that the ore contained no gold or silver at all—or, at most, not in paying quantities. Still the mill in Washoe Valley continued to obtain astonishing results, and one or two scientific authorities stoutly maintained that the ore was as rich as it had ever been claimed to be. Amid these conflicting assertions, faith in Black Rock, though terribly shaken, was not altogether lost, and the public still waited for some more definite and satisfactory decision. Among the authorities whose opinion on the subject was looked to with unusual degree of interest, was the United States Geographical Survey, which for some months has been prosecuting its labors in our State. The importance of the matter was recognized by Mr. King, who has the exploration in charge, and last fall a detachment of the corps, under Mr. S. F. Emmons, was detailed for the purpose of examining the Black Rock region and collecting specimens for analysis. Mr. Hague has been engaged at the Gould & Curry assay office for the past six weeks in making these tests, and has just finished his labors. The examination is beyond doubt the most thorough that the ores in question have ever undergone, and as perfect as it is in the power of science to make—every specimen having been subjected to a complete chemical analysis whereby all its component elements have been ascertained. Through the politeness of Mr. King, we are enabled to lay the result before our readers, and herewith submit it:

OFFICE U. S. GEOLOGICAL SURVEY,
OPHIR HOUSE, March 6.

EDITOR ENTERPRISE—Sir:—Having favored the public with so many instructive items in the history of the Black Rock Mining District, perhaps you will publish the following results of a chemical post-mortem examination made on its mineral bodies by a member of our corps.

During last October and November, a detachment of the U. S. Geological Survey, under command of S. F. Emmons, was sent to Black Rock for the express purpose of solving this long vexed problem.

Mr. Emmons and Mr. Arnold Hague patiently examined the deposits, and brought in a full suite of specimens taken from all the prominent ledges. These have received a careful chemical analysis from Mr. Hague, whose results are given below.

Respectfully yours, CLARENCE KING, U. S. Geologist.

CLARENCE KING, ESQ., GEOLOGIST IN CHARGE UNITED STATES SURVEY: I have examined at the assay office of Gould & Curry mill quite a large number of the "so called" ores of the Black Rock country, which were collected by Mr. Emmons and myself, while there last autumn. The specimens examined were selected from the most promising claims in the Harden District. Among them were the following ledges: Snow Storm, Ruby, Silver Star, Emerald, Harden Series and Summit Series—comprising the so called "green wax," "black wax," and "porous rock." All of them were subjected to careful chemical treatment in order to detect the presence of either of the precious metals in any possible combination, and the result was always the same—none of the rock contained either gold or silver.

While carrying on the chemical analyses, Mr. Balch, assayer for the Savage Company, subjected several specimens to a fire assay, and he reports them "entirely barren."

The ores may be divided into two classes—one a very porous basaltic rock, the other varieties of clay.

The clay forms the principal ore of the Snow Storm. It has a green or greenish-yellow color, and is mixed with a little organic matter and grains of quartz. Associated with the clay are masses of red jasper, coated with dendritic oxide of iron. The clay occurs in nearly all the ledges, but varying somewhat in color, as in the Summit Series. The clay forms the "green wax."

The "porous ore" is a basaltic rock, the cavities of which were found to be filled with various mineral substances, or quartz, chalcedony, sesquioxide of iron, carbonate of lime, and zeolitic minerals—most of which, with the exception of the silica, were easily decomposed by strong acid.

The "black wax" of the Ruby ledge forms the contents of the cavities, and is composed of the black oxide of iron, mixed with sand.

No mineral substance was found not common to vesicular basalts. Respectfully yours. ARNOLD HAGUE,
Assistant Geologist U. S. G. E.

The verdict of Mr. Hague, we infer, will dissipate whatever lingering faith there may be in Black Rock. Operations in that district have already been practically abandoned, but we are aware of a few people who still retain hopes of a resurrection, and a belief that Isenbeck will yet inaugurate a Black Rock millennium. The sooner they concur in the general opinion that he is an imposter, and that he has been "salting" the ores worked at Dall's mill, the sooner they will arrive at a just appreciation of one of the boldest and most stupenduous swindles whose perpetration was ever attempted. We trust the report of Mr Hague may assist them speedily to such a conclusion.

Mining Summary.

GOLD AND SILVER.

South Eastern Nevada.

[From our Regular Correspondent.]

AUSTIN, April 16, 1868.

On the evening of the 6th instant the Keystone mill was totally destroyed by fire. A litle before 8 o'clock, P. M., a man, passing from an adjoining cabin to the boarding house, observed some one coming out of the mill, (which had been idle during the day from want of salt) but paid little attention to the circumstance, supposing him to be one of the mill-hands. A quarter of an hour afterwards, the whole building was enveloped in flames. No water being at command it was impossible to save the property. It was a fine mill, being conveniently arranged, and capable of doing a large amount of work. It was erected in 1865, at a cost exceeding $90,000 in gold, and was insured for $65,000. The burning is generally supposed to have been the work of an incendiary, but the guilty party has not been discovered. The company in New York allowed the property to be sold under judgment some time ago, in favor of John A. Peaton & Co., bankers, here. Though the debt originally was only about $15,000, it is now, by the addition of interest, more than double this amount, our rates of interest being generally about three per cent. per month. In connection with the management of this company's business, there has been a great amount of scheming, which has proved anything but profitable to the eastern stockholders. The company was organized in the early days of the Reese River excitement, and, as in a host of other cases, the mines, for which the mill was built, were found to be of very little value.

A COMPANY COLLAPSED.

The Old Dominion company, operating in Hot Creek district, 90 miles southeast of this place, has come to grief, before the well-laid schemes of its shrewd operators had been fully matured. The accidental destruction of the company's mill by fire, some two months ago, sprung the trap before it was fully baited for its intended victims. Last summer a purchase was made of the Old Dominion, Merrimac, and other ledges in Hot Creek district, and subsequently a company was organized in Philadelphia to work these mines. A ten-stamp mill was built, and from the rich surface ore of the Old Dominion claim, a splendid run was made for a month or two. As the ledges were not developed, and the surface ore, as in similar cases, soon came to an end, it was receesary to keep up appearances in the east, otherwise the exaggerated representations of the organisers of the company would be palpable, and therefore the bullion extracted was sent on and paid out as dividends to a few of those having th inside track. The men working on the mines and mill had to go for months without being paid their wages, so that the company might pay dividends. Store debts of large amount were incurred, and in fact, if credit could be obtained, there was no desire to pay out a single dollar. With the burning of the mill, the hope of making money by a stock operation vanished, and now the remaining property of the company is attached by dozens of enraged creditors. The prospector who sold the mines to the company has not been paid the purchase price; he is a straightforward man, who would wrong no one, and has the sympathy of the community. Sums varying from $200 to $1,000 are due to hard-working men who will never realise five cents on the dollar. If the mill had been in existence now, it might have been doing a good paying business in working custom ore. With unopened mines, and a load of debt, there is little probability of the company investing any more money in the country, and unless there were an improvewent in the management, it would be folly to covet their investments, which are more in the form of permanent debts than anything else. Such operations are injurious to our mining interests, and the sooner they are exposed, the better it will be for all parties.

INEFFICIENT MILLS.

Many of our undeveloped mining districts have had their reputation injured by rattle-trap mills being built within their bounds. If rich surface-ore is discovered in a district, some nameless adventurer, who can scrape a few thousand dollars together to buy the remains of an abandoned mill, concludes he has a call to go in and possess the land. Under a high-sounding company-name, he gets credit all around, so as to be able to complete a miserable excuse for a quartz mill. When the machinery is put in motion it is found to be out of line, and in various ways unfit to perform a reasonable amount of work. The process to extract the silver is also wanting, and after a month or two the concern is pounced upon by the sheriff to satisfy the demands of outwitted creditors. In such cases parties at a distance argue that as the ore worked in the mill did not pay, therefore the pay is not in it. As an excuse for want of judgment, as well as general mismanagement, the adventurer himself is ready to favor the idea that the mines of the section are not as good as they were represented to be. Reduction-works suitable for the working of silver ores, particularly where roasting is necessary, cannot be erected except at great expense, and it is folly to think of making a one-horse establishment successful.

BREAKS IN VEINS.

The lodes of Lander Hill are subject to faults and breaks. Shortly after the Reese River mining district was organized, if a miner, sinking on a vein, came to one of the breaks we are now so well acquainted with, he concluded he had reached the bottom, and the claim was good for nothing. The ledge, perhaps, broke clean off, and left only a white clay seam to indicate the direction to be taken in searching for it beneath the break. Whether to run up or down the hill was for some time a puzzling question, and considerable needless work was done before an invariable rule came to be followed in such cases. Apart from the expense and time lost in following these breaks, miners now have no difficulty in making the connection between the broken-off and underlying portions of the lode. Except the Florida, there is probably not a single mine worked in this vicinity which has not been more or less subject to disruption. In the Diana there appears to be no end of faults—the whole formation being broken as far down as the works have gone. Yet ore of fine quality is frequently found where the walls of the vein are completely crushed. The North Star and Oregon ledges of the Manhattan company are also much disturbed, and a heavy additional expense has been insured in working these mines on that account. In the Buel North Star a drift of 70 feet has been carried through hard granite from the bottom of the incline, in the hope of reaching the solid vein, which owing to a dislocation, is undoubtedly further up the hill than it was supposed to be. When our mining works have got below these disturbances, the mines will give better returns than they now afford, as much less deadwork will have to be done to keep on the lode.

THE MURPHY MINE

of the Twin River company is looking better now than it ever did at any previous period. When the 200 foot level was started towards the north, it was carried 80 feet through barren rock, and it was supposed, therefore, that the ore chimney pitched northerly. The main machine, however, has now reached a depth of 240 feet, and for the last 16 feet it has passed through a body of very high grade ore. This must either be a new chimney, or the old one had a barren place in it. In either case, the ground of the McDonald company, on the same ledge, the northern end of which is only some 25 feet distant from the incline, is increased in value by the discovery. The monthly yield of the Murphy mine is about $60,000 in bullion, and it will probably be considerably increased during the next three months. Speaking of the McDonald claim, how is it that nothing is being done by the owners in New York to secure its developement? Mr. Boalt was expected back here months ago to take charge of the property, which is too valuable to be lying unproductive as at present. Were $15,000 spent in sinking a shaft on the south side of canyon, there can be no doubt that the mine would, under proper management, become a steady dividend-paying property.

DEEP SHAFTS.

Surface mining for silver has not proven profitable except on a very small scale. True, the Comstock, Lady Bryan and Accidental lodes, in the Washoe region, have yielded a large amount of paying ore at the surface, and even in Eastern Nevada considerable sums of money have been obtained by the extraction of chloride ores. But to secure large bodies of mineral and reliable veins, deep mining is indispensable. The practice is now being adopted in this vicinity of working a group of veins through a shaft put down so as to intersect them at depths varying from 300 to 500 feet. The cost of hoisting is necssaarily lessened by grouping the mines in this manner, in preference to working each through a separate incline. We have now about a dozen perpendicular shafts in this neighborhood, varying in depth from 100 to 400 feet. The North Star mine of the Manhattan company has been worked for the last year almost exclusively through a shaft, and another one further up the hill is now being opened for the working of the group of mines owned by the company. The latter has reached a depth of 320 feet. When the Sherman shaft, on the summit of Lander Hill, has attained a depth of 1,000 feet, there will either be a series of the richest mines ever seen in any part of the world laid open, or the mining interests of this section will dwindle into insignificance. The permanency of our mines, if they are inexhaustible, is to be determined only by such deep works.

THE TIMOKE.

Since my last letter a mill working of 37½ tons of ore from this mine has been settled for. The average pulp assays went a little over $309, and the actual yield in bullion was about $257 per ton, coin value—82 per cent. of the assay. After paying all the milling expenses, the amount paid over to the agent of the company was $7,997 63, which with only a few miners employed was a very good monthly yield. The dividend remitted to the office in Boston for March was five per cent. on the subscribed capital stock, and a similar remittance will be made for this month.

MILLING FACILITIES.

Owing to the loss of the Keystone mill, there will probably be some difficulty in getting ores worked at the usual custom rates of $45 per ton. Mr. Curtis, agent of the Manhattan company, is considerately endeavoring to meet the wishes of mine-owners and agents by doing a large amount of custom work. Alterations are being made in the California mill with a view to its being set in motion as quickly as possible, but it is incapable of putting more than four tons through in the 24 hours. The Mettacom mill is in good running order, and will probably be set in motion as soon as Mr. Howell, the Superintendent, returns from Sweetwater, where he has gone with a pack train loaded with provisions and tools. The Empire State and Boston mills have both been idle for a long period. The former might be profitably set in motion provided a suitable Superintendent were in charge; the latter, though erected at a great cost, is unfit to do ordinary milling work, unless a considerable outlay were first made upon it.

SMOKEY VALLEY DISTRICT

The accuracy of the criticisms in my last letter respecting the property of the Big Smokey company has been confirmed by the abandonment, for the time being, of the ledge which was depended upon for supplying the newly-erected mill of the company with ore. The New York secretary, who is here at present, has openly announced that he is at last satisfied that the rock at command does not contain sufficient silver to be profitably reduced. It is rather singular he did not make this discovery when here last year. It is too late now to blame other parties for the deception of the disappointed stockholders. He professes to have had immense experience in quartz mines, and ought not, therefore, to have been fooled. Every miner in the country knew, years ago, that the quartz it contained was too low in grade to be worked while mining and milling were at the high rates still prevailing. A few tons of selected ore are being milled; the mill is said to work well.

THE COMBINATION MILL

has been temporarily closed for repairs and alterations. The yield of bullion was averaging about $800 per day when work was suspended; a much smaller return than the community was led beforehand to expect. Strong efforts are being made, through the newspapers, to make it appear that the mill is nearly perfect, and the yield of bullion immense. A leading article in the *Territorial Enterprise* of the 12th instant goes so far, even, as to put the monthly yield of bullion at $100,000—an exaggeration patent to every one acquainted with the actual condition of

affairs. The *Enterprise* is usually well informed in such matters, but on this occasion the editor has probably been led astray by interested parties. The mill must undergo many alterations before it can be considered a first-class establishment; and the mines of the company, valuable as they are, will require to be opened to a much greater extent than they are at present, before a steady supply of paying ore can be depended on to keep a 40-stamp mill in full profitable work. How long will it be before parties interested in mining properties come to learn that exaggerations are wholly unnecessary if their mines are really good?

THE MANHATTAN MILL

is again at work, and turning out great numbers of silver bars. Though, owing to the breaking of a shaft, it was running little over half of last month, its yield of bullion had a currency value of $68,566. The mines of the company are looking well, and there is abundance of high grade ore still at command. When the Oregon shaft, now being opened, reaches the North Star vein, and the necessary levels have been run, there will be ore enough extracted to keep several mills at work.

ITEMS OF INTEREST.

In the Buel North Star a vein has been found in the exploring drift, but is supposed not to be the one the Superintendent is searching for. Several ledges in Hot Creek district are being opened with much encouraging results.

There is a prospect of a sale of mining property in Manhattan district, 18 miles from Belmont, being effected, as also at Montezuma, still further south.

Working capital is being raised in New York to build a mill at New Pass, 25 miles west of Austin, for the reduction of its gold ores.

The Rutland 5-stamp mill at Reveille district is about to be repaired and provided with roasting furnaces.

The mill of the Alameda company, at Pahranagat, will soon be turning out bullion—how much of it is yet to be determined.

Several parties, professing to have the power to build a mill if they can find suitable mines, are now in Columbus district, inspecting the lodes there which have become so celebrated. I have no doubt they will be highly pleased with the Northern Belle and other prominent mines of the section. The last working of the Florida ore went over $500 per ton—fire assay. The mine is still turning out fine ore. The Troy mine is yielding magnificent minerals at present. E. J. DARE.

California.

Nevada County.—The Grass valley *National* speaks in encouraging terms of the mines in the Eureka district. The last crushing from the mill at the Birchville ledge paid $44 12½ per ton. The tunnel is now in 200 feet with about 400 still to run. They are running three shifts and employ thirteen men. Except in the tunnel, work is suspended at this ledge on account of the deep snow. The Occidental company are sinking a shaft to the depth of forty feet, to strike the ledge. Their rock shows well in free gold and sulphurets. At Snow Point, the Kentucky Shaft Gravel Mining company are about to put up an eight-inch pump and machinery, after which they will sink deeper to find the blue lead. The Golconda tunnel run into a portion of the Kentucky Shaft company's ground, through which the gravel will be washed with great advantage. The whole district promises to be very lively in the summer. The owners of the Idaho extension of the Eureka ledge have struck the ledge in their claims. The rock shows well in gold and gives promise of being as valuable in size and yield of gold as the Eureka company's claim adjoining. Mr. Mark Benallack, underground foreman at the Eureka mine, was accidentally killed on the 20th of March. .....The *Gazette* has the following: The main tunnel of the Chalk Mountain Blue Gravel Mining company is now in three hundred and fifty feet, and the channel was struck some ten days ago. Before the company had been "breasting" half an hour, they took out a two ounce nugget. The gravel prospects well. About half a mile from the above point the same company has another tunnel in a distance of one hundred and twenty feet, which has just tapped the channel, from which good prospects are obtained. This company also has a bedrock tunnel at the North Fork at Greenhorn, which is in one hundred and twenty feet, and from indications is but a few feet from the main channel. This channel is a continuation of one at the Cascades. The Red Diamond company, immediately below the Chalk mountain and Blue Gravel companies's claims, at the Cascades, on the same channel, has been taking out gravel from its tunnel that yields $1 50 to the pan. The tunnel is in three hundred feet. The successful opening of this great ancient channel, at the Cascades, will present a new field for gravel mining that has hitherto scarcely been touched .....The Gougeye Eastern and Empire (cement mills) at Hunt's hill, are all running regularly and doing well. Each one of these mills employs eight stamps. Good miners are scarce at this mining camp, and fifteen or twenty good drifters and carmen can find steady employment there, and pay every week if they desire it.....Thomas Marker, who came down from Washington on Monday, reports but very little mining done in that place or Omega. Ditches and flumes have been severely damaged by the heavy floods .....The *Transcript* says the Pittsburg mine is looking first rate. The company contemplate adding five more stamps to the mill next month, when the mill will consist of fifteen stamps, and be capable of reducing a ton and a half of quartz per hour.....The Merrimac mill has been purchased by a company owning a quartz ledge at Ragan Flat, near Cement hill. It will be removed and put in running order upon the new ground at an early day.....The American gravel claims at Sebastopol, owned by Swan & Co., after a run of twelve days, cleaned up last week, taking out $15,000.....The Grass Valley *National*, March 25th, says: The New York Hill company will start up again in a few days, and will be able to crush the rock as fast as taken from their mine.....Operations will be resumed the coming week upon the Empire company's mill and mine.....The *Gazette*, March 31st, says that Richards & Co., owners of the mill on Deer creek, have just completed some extensive improvements—having almost rebuilt the mill and stamps. New batteries have been put in. It will be set at work on rock from the company's ledge—the Ural—which will supply enough to keep it in constant operation.....EXCELSIOR—The *Enterprise*, March 12th, says that the tunnel connecting with the main shaft of the Mohawk and Montreal mine, situated in Excelsior district, is completed, and ore may now be taken from the lead and transported by means of cars directly to the mill.....The Gold Hill *News* says that the Enterprise mine is the only one beside the Mohawk and Montreal which is being worked in Excelsior at present. A mill is completed and ready to run as soon as the immense depth of snow shall subside. The mine promises to pay its way hereafter.

Placer County.—Shirt tail Cañon, so famed in early days for its richness, but lying idle for the past ten years, (although held by a party of twelve men,) is likely soon, says the San Francisco *Mining Press*, to yield up its treasures quite equal to former times. The Cañon is over 20,000 feet long, and has been the receptacle for all the tailings from the richest hills in Placer county during all this time,—the washings from Brushby cañon, Yankee Jims, Iowa hill, Wisconsin and Smith's hill, together with all the mines on that side of the Divide emptying into it, for a distance of fifteen or twenty miles,—the result is that the tailings are now from 10 to 50 ft. deep, all of which are thoroughly impregnated with quicksilver, carrying more or less gold, and all ready for working, while all the water needed runs through the cañon after leaving the other claims. The water and quicksilver are free to work with, while for all time to come the mines above are furnishing material that must pay as long as the mines are worked. Recently Mr. D. M. Hosmer, in connection with a few other gentlemen, have purchased the remaining interest, and are about commencing to flume the cañon and wash all the dirt. They are commencing about a mile below the head, while preparing an immense flume at the foot of the cañon, where there is a fall of some sixty feet, with a good fall all the way up. Competent judges think that the claim will pay an average of at least $10 per day to the hand, and as the company will put on fifty men, as soon as the water permits, if the above initial estimate is correct, they will realize at least $150,000 the coming year. There is no doubt but that the claim is among the richest gravel tailing claims in the State. .....John Walgreen is said by the Auburn *Stars and Stripes*, of March 26, to have worked five tons of rock from his vein near the celebrated Good Friday vein, and the yield was at the rate of 14½ ozs. per ton, or about $1,200. There is more rock in this vicinity equally as good.....Jos. LeLaughlin, while strolling around near Ophir, picked up a chunk of gold thickly studded with quartz, which yielded upwards of $300.... The Dutch Flat *Enquirer* says that Staple Bros. are meeting with good success in the Waukegan claim .....The Auburn *Herald*, March 28, says that the contest between the Ophir and Good Friday Co's. has been amicably settled. The Ophir company pays the Good Friday $3,500, and allows the Good Friday boys to have all the rock that is now out, supposed to contain at least $2,000 ....A Gold Run correspondent says: The miners are most of them at work—none but those interested know upon what terms .....According to the *Enquirer*, at Iowa hill, the miners are steadily descending at the rate of two feet in twenty-four hours. The Sailor Union company are running off the top dirt of their claim by the acre. Butler and Manuel are at work in the old Rich claims, just below the Sailor Union. The North Star company are running a tunnel through the bedrock, to obtain fall for their sluices, preparatory to rigging up as a hydraulic claim. The tunnel is now in 300 feet, and they have about 300 feet more to run. The Jamison company are piping away, and are being well remunerated. This claim and the Sailor Union, working as they do from opposite sides of the hill, will in a short time cut the work in two. The Morning Star company are running a tunnel to their pay lead, the present one being too high for practical use. The mine is paying splendidly.

Calaveras County.—Under the exhilarating influence of the pleasant weather, says the *Chronicle*, March 28, miners have again commenced work with energy. New and extensive operations in quartz are being inaugurated, and the coming season promises to be livelier than for several years preceding. The success which has attended the opening of the lode in Rich gulch is having a very beneficial effect, giving encouragement to others to persevere. Gravel mining, in Chili gulch, is being successfully prosecuted. Brackett & Co. are erecting a mill on their claim for the purpose of crushing the cement, it being found impossible to extract the gold by the simple process of washing. They will be ready to commence operations in the course of two or three weeks. Messrs. Shaw, Albright, Ahrnot & Co. are hydraulicing with good success. Stockton ridge is melting away before their combined efforts like snow before the sun. Paul & Co., Martin & Co., Harkins & Co., are also busily engaged in taking out the shining ore. The Golden Gate Mining company, we are informed, are getting excellent pay.....The San Andreas *Register*, of the same date, says: Quartz prospectors report rich indications in various directions around the town. A great many new leads will be worked in this vicinity this summer. From every direction throughout our county the news and reports indicate prosperity; and the miners seem to be settling down to the conclusion that quartz claims will pay them for their labor, and that they are easily found and readily worked in old Calaveras ..... The *Chronicle* says: The lower Rich Gulch mines are said to be in a flourishing condition. The Palamo Mill and Mining company are running an eight stamp battery, with a combined weight of 4,800 pounds. The stamps are run at the rate of eighty strokes per minute, and the crushing capacity is from eighty to one hundred tons per week. The tunnel has been driven sixty feet on the lead, which is fully six feet in width. Competent judges are of the opinion that the rock will pay from $10 to $12. Specimens have been picked up which assayed at the rate of $900 per ton.....Alexander & Co. are running their mill constantly and meeting large returns. Norton & Co. are in 140 feet with their tunnel, and pushing it ahead night and day. They expect to reach the vein in a month, when they will be two hundred feet below the surface. Rich gulch is the best quartz mining region in this section of the country.....A letter from Mokelumne hill says: In the Quartz glen, (or Foote & Thompson) mine, the present owners have driven a tunnel on the vein for a distance of 650 feet. Rock from the old works, packed on animals to the French mill, brought $76 per ton. South of the claim is the French mine. The mine was worked to a considerable extent, with fine prospects, but as the mine belonged to one party and the mill to another, they disagreed, and in consequence are both idle. The next, the Anglo Saxon mine, a half mile east of the Quartz glen, is the same that created so much excitement in 1856, by the extraordinary richness of the rock; since then there has been a large amount of work and money expended. The developments consist of three shafts, one of which reaches the water level of the vein. It is in this shaft that the last work was done. Rock last fall, worked in the French mill, paid $10, while the sulphurets assayed $600 per ton. There is a level run from the bottom of this shaft 32 feet. The vein here is three feet in thickness, and richer quartz than this appears to be hard to find.

Plumas County.—The *National* says that at Indian valley the mines are doing well. The Crescent mill commenced crushing on the 27th of February. They have a large supply of rich rock. The Whitney company have discovered some very rich rock. Indian valley mill is doing well. Judkins & Kellogg's mill, at Round valley is in full blast. The Lone Star mill, at Greenville, will commence work shortly. The Caledonia has been crushing rich ore up to Thursday, February 27th, when the mill broke down; it will soon be repaired. Operations are temporarily suspended at the Bull Frog mine, near Rush creek, in consequence of the late heavy rains filling up the claim. At Washington hill, the American company are working twelve hands, and are taking out from $6 to $10 per day to the hand. The Union claim at the same place, is making excellent wages. .....The Plumas *Union*, of March 7th, says that the Poorman's Creek District is paying well. Keeler & Co. are making from $6 to $10 per day to the hand. Bradley & Co. have been running a tunnel for three weeks, and have struck a good prospect. Moore & Co's. claims are all paying well—they found a four ounce chip a few days since. The owners of the hydraulic claims have resumed work. Other claims are doing well. The trouble at Sawpit, between the Union and New York companies, has been amicably settled. The Buckeye company is working sixteen men, and the claims are paying well. The New York company are working nineteen men, and are taking out a large quantity of pay dirt. The Union company are working seven men and are also getting out good pay dirt. But three men are working in the Franklin claims, they are making about $4 per day. The Eagle company is working thirteen men, and they are filling the dump-house with rich pay dirt. The Mountaineer company are at work, running a bedrock tunnel; they are working day and night, and are averaging about sixteen feet per week—the tunnel in nearly 900 feet. Pollard & Vandergriff, in their old claims at Richmond Hill, are taking out big pay. Hogan & Co., and the other hydraulic claims have fitted up, and are ready to commence playing as soon as a supply of water can be had.

Kern County.—The Havilah *Courier*, March 21st, says that the St. John mine, at a clean up some weeks since, obtained $7,500 after a two weeks' run. The company obtained $9,000 at the last clean up, after a fortnight's run. Hammel & Denker are going to work energetically to develop the Burning Moscow. It prospects well. George Leeper has discovered a very rich lead in the new El Dorado district. Operations are to be resumed by the Alpine company on the Greenhorn mountain. Work will soon be commenced again on the Long Tom mine, under the superintendence of Joseph Woodworth, a veteran miner. Ellsworth's & DeLand's machinery has arrived. It is to be used working mines at Kernville.....The Visalia *Delta*, March 25th says: At Kernville, in Kern county, the principal mine is owned by two companies, Hutton & Co., and Ellsworth and DeLand, Which mine, prior to the great freshet, was yielding an average of $25,000 per month; but owing to their mine being filled with surface water, they were compelled to suspend operations to a considerable extent, until such time as they can set their new steam hoisting works in operation, which will be completed about the first of April. At Sageland, Messrs. Taylor & Co are doing an enormous business in the way of turning out bullion. J. R. Rogers & Co. will also have a twenty stamp mill running in Sageland within the next thirty or forty days, when, it is confidently asserted, that those two mills of thirty stamps will produce more bullion than one hundred stamps in any other district in the country.

Amador County.—It is said that the Mahoney mine, of Sutter creek, has been sold in San Francisco for $250,000.....The Jackson *Ledger* says that the yield of the sulphurets saved at the Coney & Bigelow mine for the month of February, amounted to the sum of $3.500..... More good placer mining strikes have been made the present season than for some winters past. The owners of a claim at Clinton picked up over 900 pounds of nuggets since they began work at the beginning of the rainy season. The same ground has been pronounced worthless since 1850.... Two hundred tons of ore from the Kennedy mine is now being delivered at the Coney & Bigelow mill for crushing.....At the Casco mine they are now hoisting large quantities of rock..... A fortnight's clean up at the Oneida mill during the run of which but two-thirds of the stamps were kept in operation, yielded over $10,000 in gold. Work will be pushed on more vigorously than ever before.....The company owning the Casco mine have contracted to have 1,000 tons of quartz hauled to their mill on the Mokelumna river, about one mile from their mine, at the rate of 50 cents per ton.....Messrs. Tripp, Skinner, and two Chilanos are working a vein of rock in French Gulch, south of Butte mountain, the rock of which promises by an assay to yield over $1,200 to the ton. The ledge at present is six feet in width.

Yuba County.—A Brown's valley correspondent writes that the workmen of the Pennsylvania claim are troubled with water in the lower levels, but fortunately the upper levels furnish more than the necessary supply of good quartz for sixteen stamps. The company are now saving a large quantity of sulphurets. The Rattlesnake claims also had all the water they could take care of. The company are pushing on their drifts and shafts, however, with great vigor, and seem to be in good spirits. They will begin crushing with their ten stamps on or before the 15th of April. In the Danebridge claims the water greatly interfered with the opening works of the company. Their prospects are still encouraging, and their mill will again be started within a short time. The Jefferson company continue to prospect, under the direction of their superintendent. The Sweet Vengeance is now ready to resume work as soon as the weather will permit it.

Alpine County.—The Pittsburg company is said to have struck a ledge two and a half feet in width, about three hundred feet from the mouth of the tunnel, which shows good silver-bearing quartz.....The Pennsylvania tunnel is now in what is thought to be the casing of the ledge. This is one of the substantial claims of Alpine.....The Markleville *Miner*, March 21st, says: About twenty-eight feet have been added to the lateral tunnel of the Monitor company during the past week. The tunnel of the Pennsylvania company is in softer rock than usual, and more water is encountered. A shaft 160 feet long, 4x4, has been run into the open air from the tunnel of the Leviathan company. Genuine black ore has been struck in the lower level of the Morning Star mine, similar to that found in the palmy days of the upper level.

Tuolumne County.—It is stated that a very rich quartz vein has recently been discovered by Mr. Sam Platt, half a mile from Roach's camp, on the road from Sonora to Sumnerville ..... The Sonora *Democrat* says that there was an exceedingly rich strike made at the Paterson mine in Tuttletown, on Monday, March 16. Several tons of decomposed sulphurets of iron and quartz were taken out, and the rock was literally filled with gold. The vein that contains the precious metal is six inches wide, and extends from the top of the tunnel down to the spot that is now being worked. The gold glittering in the rock can be distinctly seen by the light of a candle.

Siskiyou County.—The Yreka *Union* says that it is the intention of the agent of a San Francisco company to open and mine the lower portion of Indian creek. No doubt is entertained but that the lower portion of the creek contains a rich channel of gold. The reason it has not been worked before now is on account of its depth and the difficulty of draining it..... Special attention is called to the Klamath river, immediately below the mouth of Cottonwood creek. Last fall one company, Shaft & Co., threw in a small wing dam and worked for a few months, and as a result, took out, we understand, some $16,000.

Mariposa County.—The operation of pumping out the Washington mine, near Hornitos, has commenced. It is calculated the greater part of it has been done within the last few months. It is believed that most of the bars from Black Hawk, down for two miles, if properly worked will pay good wages in both coarse and fine gold.

Inyo County.—We hear very good reports from Cerro Gordo The *Virginia Enterprise*, March 21, says: Notwithstanding the severe winter, one or two furnaces have been kept constantly in operation. Some of the ore smelted has yielded as high as $1,000 per ton.

Santa Clara County.—The workmen at the Almaden Quicksilver mine are on a strike for higher wages, the demand being for $3 per day. We learn that all work in the mine is suspended, with the exception of that of a few hands employed at the furnaces.

Sierra County.—The Independence mill, at Sierra Buttes, was destroyed by three successive snow slides, on the 3d of March. It will require $25,000 to put the mill in good order again. The Keystone mill has met the same fate.

Butte County.—The *Record*, March 28, understands that parties from below have purchased the Jordan mill and mine, for $10,000. The purchaser is making preparations to work the mine.

Colorado.

(From an Occasional Correspondent.)

GEORGETOWN, April 28, 1868.

Although a residence here from 1858 to 1863, with a general experience in mining affairs, might qualify me to speak generally

of the condition of Colorado, still I shall beg leave to state briefly the result of some of my observations in and around Georgetown. As you have in your gleanings from Colorado exchanges noticed the operations on the Herkimer, Brown, Baker, Coin, Beecher, and many others of the noted mines of this region, I would like to add that the accounts so furnished do not flatter some of those mines, as has been shown by later developments. Experience has been so uniform that it has become a recognized principle, that any of the main fissure veins of the country, whether small or showing more mineral wealth on the surface, they invariably increase in richness and quantity of vein matter as depth is attained. As there are few men who can claim the title of "Old Settler" in this Georgetown region with better grace than myself, permit me to speak particularly of the developments now being made on one of our old mines. The Kansas Lode, situated on Griffith mountain, was discovered by Mr. Geo. Griffith, who was emphatically the pioneer of this district, after whom Georgetown received its name. Georgetown was laid out in 1860, and is already becoming famous as the emporium of this rich silver region. Although he discovered the Old Kansas Ledge in 1859, he did not put it upon record until 1860. Four hundred feet of this ledge, including the discovery, and No. 1 each way east and west, passed into the hands of Mr. John M. Hood, of New York, in 1864. This mine was known to all the pioneer prospectors, but in January last some parties, disregarding the rights of Mr. Hood, unfortunately for themselves, began to work upon it, and have proved it to be one of the best mines of Colorado. Upon examination to-day, I find that they have, at a depth of 35 feet in a drift 50 feet, a vein of "pay ore" which will yield from $80 to $500 per ton. One ton of this ore per man can be raised daily. This lode was thought to be a gold vein, and was sold as such; but, like all the mines of this district, it is emphatically a silver lode. You will allow me to say, for the encouragement of all those parties who purchased what they were led to believe was gold property in 1863-'4, and made such miserable failures because they mined for gold where it never existed, that if they are still the fortunate owners of any of the prominent mines of this district, and desire to retrieve their losses, a few hundred dollars judiciously expended in developing their property for silver, can but prove satisfactory. I desire also that one of the most radical improvements that I have noticed in this country generally, is, that the mine owners have at last waked up to the truth that capital in the east is no longer to be drawn into a gold or silver speculation by the simple exhibition of a few pounds of auriferous ores, and, acting upon this experience, they are going to work in earnest this spring to develop their own property, thereby showing their own confidence in their mines. They have also learned at last that if a mine has been proved to be of real value, its owners will not have to go peddling after capital, when that capital can be represented at the mine. The result of this change in the *modus operandi* of mining operations here will be a development of the mineral wealth of the country, during the coming summer, unknown to the experience of the past five years, and that, too, principally by home industry; for, in fact, the most important "capital" of any mining country possessing true merit is confidence in itself. Among the great wants of this particular region are "Dressing Works," to prepar ethe ores, so that they may be smelted with profit, the great advantages of which you will allow me to speak of more particularly hereafter.

DAVID T. GRIFFITH.

The Georgetown *Miner*, in the course of an article on "A Home Market for Ores," complains bitterly because the reduction works, which are offering remunerative inducements to mine owners, are not kept supplied with sufficient ore to keep them running steadily. It says that although it has been generally known for the past month that the superintendent of the Georgetown Smelting Company was prepared to buy ores at remunerative prices to the mine owner, yet, during that time, there have been delivered at the works only about 6 tons of ore, barely enough to keep them running about 36 hours. "We have," it continues, "reduction works here now that are offering from 75 to 100 per cent., in currency, for what the ore contains, and cannot get enough to start on. We know of mines here that will yield from a quarter to a half ton of selected ore per day, that will run from $300 to $1,500 per ton, and we are not cognizant of any business or investment that will pay a larger return or profit than raising ore and selling at the rates offered. There are men here who are doing all in their power to develop these mines, and raise ore for the market, but where we have one such there are a dozen who will do nothing." Not very cheering statements truly; but we are inclined to think that the *Miner* might have cited other reasons why the reduction works are not supplied with ore more copiously than they are at present than the one which it gives. In this connection we will here remark that Messrs. Secor, Swann & Co., of the Manhattan Metallurgical Works of this city, are in receipt of several parcels of selected ore from Colorado and Montana, which, notwithstanding the cost of transportation, they say they are able to work so as to leave a handsome profit for the shippers.....Huepeden, Wolters & Co. have become successors to Garrot, Martine & Co. in the reduction works heretofore conducted by that firm at Georgetown. The *Miner* places before its readers the amount of ore treated, and the gross production of these works, commencing with the 6th of August last, and ending the 1st of April. It says: "During that time the works have run about seventy days, and have treated 166 tons, 1,300 lbs. of ore, from thirty-five different lodes. The capacity of the works is less than three tons per day, and some of the ore treated was heavy with galena and zinc-blende, while most of it was just as it came from the hands of the miners, many of whom were not experienced enough to distinguish mineral from granite. The amount produced in the time stated was $18,124 90 coin value, and may be summed up as follows: Number of lodes, 35; amount of ore, 166 tons, 1,300 pounds; silver, coin value, $18,124 90. The result shows an average yield of $108 79, coin value, per ton in silver. This we think will compare favorably with any silver region in the world. The works of Messrs. Garrot, Martine & Co. were projected on a small scale as an experiment, to see whether we had ore here that could be treated successfully without dressing or smelting. The result, as shown above, has been satisfactory, and these gentlemen deserve the thanks of our whole mining community for having solved the problem so thoroughly and so well. It only remains to follow up the lead made by the pioneer company, constructing works of large capacity on the same principle, and the future prosperity of our mines, so far as sulphuret ores are concerned, is secured beyond a doubt. Works of quadruple the capacity could be run with trifling additional cost over what the company has been obliged to pay. If any man with capital to invest has faith in the product of these mines, let him demonstrate that faith by the erection of reduction works, and his reward shall be large and sure.....Messrs. Goss & Co. have been engaged since last fall in prospecting for and developing the lodes they have discovered on Brown mountain. "All the lodes of the group," says the *Miner*, "are galena-bearing, although but few of them have been developed to sufficient depth to define the galena vein. From the indications we are forced to the conclusion that this belt is the largest, and carries more true fissure veins than any other portion of our district, taking into consideration the quantity of ground over which they extend. It is the determination, we believe, to continue active operations throughout the coming season.".....The same paper has the following news items of date April 16: There are about three tons of ore from the U. S. Coin lodes in the Georgetown Smelting works, scarcely a specimen of which does not show ruby silver. Mr. France has sent a specimen to the office of the Brown Co., in Philadelphia.....The east shaft on the Nicholls' lode is now down 100 feet, carrying an ore vein, 20 inches in width, of sulphuret of silver and galena ore. Some little stephanite, or brittle silver, is found in portions of the vein.....Mr. Kirtland has shown us a button of silver weighing 35½ ounces, taken from 500 pounds of ore from the Young America lode. This gives a yield of $189 20, coin value, per ton, currency, $248 28, and is 89 per cent. of the fire assay. The Cherokee lode, situated near the foot of Republican mountain, between the upper and lower town, is now being worked. An adit is being driven on the vein, now in about twenty feet, showing the crevice to be four feet in width, carrying a fine quality of quartz..... Huepeden, Wolters & Co. shipped by Wells, Fargo & Co., on the 17th April, 166.25 ounces silver, 749 fine, coin value, $161. The ore was from the Big Indian lode, and the amount saved was 80.37 per cent. of a fire assay.....Active mining operations will soon be resumed by the Colorado Gold and Silver company, in Peru district.....We cull the following items of news from the files of the Central City *Herald* to the 27th ult.:—Mr. J. O. Stewart made a test run of 150 lbs. of Munsell ore, last week, from which he obtained 52½ oz. of pure silver, worth in coin $70.87½, or in currency, $88.60. The cost of treatment was $37.50, which leaves $51.10 for the miner. This shows a profit of nearly $500 per cord (as we used to count it), after paying the highest price, which is unfavorable at present. Mr. Stewart intends putting up a roasting and reverberatory smelting furnace, in the course of a month. The capacity of his works will then be one ton and a half per day, and he will be able to smelt ores at a reasonable figure. He guarantees now to take out ninety per cent. of the silver contained in the ore, and will allow the miner to have the silver obtained from his ore, which is altogether more satisfactory than to receive its value in greenbacks. With his small works he has now always enough ore on hand to keep him running for two weeks. There is little doubt but he will make a success of the larger works.....The owners of the Winnebago lode, which is situated on Leavenworth mountain, a short distance above Georgetown, are paying $200 per ton for mining and raising the ore to the surface. This is an enormous price, but the exceeding richness of the ore justifies them in paying it. The miners who are at work on the lode are making good wages.....Mr. Miley has started up the eight-stamp water mill belonging to E. W. Holbrook, North Clear Creek, on ore from the Bates or Hunter lode for John Sanderson. This claim has opened out into a good body of iron .....Ore from No. 11, Gregory lode, is being hauled to Gregory No. 1 stamp mill. This mill will be started up this week.....Woodbury & Co. have a force of hands at work putting twenty stamps into the old Eagle mill, just above the Black Hawk mill. When completed it will be one of the finest custom mills in the Territory. The motive power will be water..... Last week Messrs. Moores & Myers run two cords of Bates ore through the Wilson mill, for Messrs. Champion & Smithern, lessees of the Coweuhoven claim, from which they retorted twenty ounces gold. The ore was taken from the sides or walls. It had been considered by parties who heretofore worked this claim as worthless .....Three miners who are working near the mouth of Chicago Creek took out 13 ozs. 6 dwts. 4 grs., working five and one-third days last week. They are working in the old bed of the Creek, and have to pack their pay dirt to the water..... Gus Rader, who is mining on South Clear Creek, was in town this morning. He speaks well of times in that part of the country. The miners are all doing well. Six companies are working below Masonville.....The Whitcomb mill, Nevada, is being run on ore from the Clark Gardner claims, Gardner lode, Quartz Hill, and on ore from the discovery claim of the California lode; both lodes are situated in Nevada district.....A company has started up the Enterprise mill, thirty-five stamps, belonging to the N. Y. Co. This mill, since having been shut down, has been put in A No. 1 order. It is being run on custom ore for the following parties: Consolidated Gregory Co., Gregory lode, fifteen stamps; Adaline lode, for J. W. Remine & Co. ten stamps; Bates lode, for Col. Tannatt, five stamps, as also five stamps for the Union G. M. Co., G. K. Sabine agent. The mill is run by water..... Lynn & Van Valkenburg are raising a very nice quality of ore from out of the discovery shaft on the Onondaga lode, Nevada district. They have, at the depth of sixty-five feet, uncovered a very wide crevice of "pay truck.".....The California works have deposited in the Rocky Mountain National Bank, two silver bricks, weighing respectively 402.75, and 64.80 ounces; coin value, $451, which was the product of five tons of galena ore from the Washington lode.....Col. Tannatt was to start up one section of the batteries of the Empire mill, Chase gulch, upon surface quartz from the Fiske lode, for the Manhattan G. M. Co. .....Mr. L. C. Miley is fitting up the Holbrook eight-stamp water mill, just above the Bobtail mill, North Clear Creek, and will soon start it up on custom ore. There seems to be an increased confidence on the part of claim owners and workers in the stamp mill process. ....Mr. Sanderson has at length overcome the difficulty which he has been undergoing for the past two months, and has demonstrated that the Hunter or Bates lode can be made to pay. Mr. L. C. Miley is running the University mill on second quality ore from this claim .....The Montanna mill, Spring gulch, has been started up by Mr. Rheinecker, on custom ore.....Mr. Peregrine's claim, on the Running lode, is opening out into a very fine body of iron. He has reached a depth of sixty-five feet, and has commenced two levels, and will continue to sink the shaft.....Moores & Myres are running on one section of the Wilson mill, Mountain City, on ore from the Bates lode, for Mr. H. P. Cowenhoven .....The Black Hawk company are running the Consolidated Gregory mine pump. This company expect soon to have their new pump, which they are putting into No. 2, Gregory shaft, in order, for draining their mine.....Col. Tannatt has leased the Empire mill for six months. .....The Central City *Register*, of April 16, has the following items of news:—The Baker mill, in Chase gulch, is running day and night, not stopping from one month's end to another. Mr. Sabin has it so arranged that when he desires to clean up he is not compelled to stop the engine, but hooks up one stamp after another till all there are in a single battery are suspended; when the battery is cleaned up they are again set in motion. He is preparing to put up a single immense stamp, with five feet fall, to be used as a rocker. It is also proposed to put up twenty more stamps this season. The mill is doing a good business on the Union company's ore. After a long series of experiments, Mr. Sabin has concluded that he saves more gold to clean up the plates every day, and he is therefore pursuing that course. All the tailings are scrupulously saved for future treatment, and there is an immense quantity of them piled up around the mill. .....The Ni-wot company recently discovered that a large vein of ore had been left standing on one wall of their mine and commenced taking it down, shortly afterward a scale of fifteen feet more caved in from the same side, revealing another large and valuable seam of ore, which the mill has been set at work crushing. No granite walls have yet been found, and other veins of ore may yet be found in the porphyry dyke in which the mine is located. Things are looking up at Ward.....The Barrett Brothers are erecting a stamp mill on the Winebago, to crush all second quality work. Work in the mine has been suspended for the purpose of timbering, putting in engine, and making the other improvements.....The parties who are working the Onondaga lode near Dogtown, discovered yesterday that what they supposed to be wall rock is rich ore and will pay largely by crushing.....Mr. Field is about to start up his mill above Black Hawk. He will run on his own ore from the Bobtail lode. He always made it pay, and doubtless will do so again.....Messrs. Harvey & Frazier had assays made at the Territorial Assay Office yesterday of average ores from the property on the Gregory, worked by them. The result was $52.24 in gold, and $15.79 in silver, or a total of $71.03 per ton, of 2,000 lbs. The ore contains considerable copper also.....A certificate of two assays has been handed to us by Mr. Scarff. One is of ores from the Lord Byron, which gave $189.65 per ton of 2.000 pounds in gold, and $63.44 in silver. The other is from the Queen Victoria lode, and gives $44.94 in gold, and $23.85 in silver. The former is in Nevada district, and the latter in Eureka.....The Denver *News* says:—Mr. Charles Slade, from Granite district, informs us that the two shafts on the Hattie Jane lode are respectively sixty and seventy-five feet deep. Drifting has been begun. On the Yankee Blade lode the shaft is now seventy-five feet deep, and the vein of ore fully three feet wide. Last Friday the vein widened about ten inches. Last week a new and very rich discovery was made a few hundred yards east and south of the Yankee Blade lode. It is called the Midas lode, and was found by Mr. Fletcher. The quartz is covered with free gold. But little prospecting has been done in the district this winter, but it is expected that a number of lodes will be discovered during the coming season.....A letter in the *News* from Oro City, dated March 15, says that the prospects for mining in that section of the country for next season are very flattering for both lode and gulch mining. The prospecting that has been done here and in Granite district, says the writer, has been attended with success, alike satisfactory to the parties directly interested, and to those who have a general interest in the welfare of this part of the Territory. By the middle of next month the roads will be open to Cash Creek and Dayton, and up the Arkansas river as far as the mouth of California gulch, and then we may look for active preparations for a successful season's operations in gulch mining, while at the same time lode prospecting and mining will receive a fresh impetus that will have a marked influence on the future prosperity of our country. .....We have the Boulder Valley *News* of the 16th ult. Cobb & Co. are still working the Mastodon lode at James Creek..... Harris & Slater are working claim No. 7, on the the Hoosier, and Jas. Carr has completed his contract by sinking a shaft thirty feet on claim No. 5, which belongs to Mr. Corson.....Mr. Tubbs has a shaft fifty feet deep on the Bailey lode.....Sixty-two ounces of gold were sent to this city last week, the result of ten day's run by the Ni-Wot mill.

Arizona.

We last week gave an account of the La Paz and Wickenburg mines from the correspondent of the San Francisco *Bulletin*. A second letter from the same source, dated at Los Angelos, Cal., tells of the doings around Weaverville and Prescott. The writer says: From Wickenburg, distant twelve miles, you come to Weaverville, (this is situated on the road to Prescott,) where from 1863 to 1866 was a very large and thriving mining town, containing several hundred men, but now the mines are only worked by 60 miners. I was told they were doing well. The miners have built a ditch, from which they are supplied with water. Antelope peak, at the base of which is built Weaverville, is a most remarkable peak, from the fact that on its highest point, which is not very flat, some miners dug out with knives and hammers, and then afterwards worked some of the loose gravel (for there was not much,) by the dry process, and made, some say, $1,000,000. The lowest estimate I heard was that they took out $500,000 in gold. This peak must be several thousand feet above the level of the surrounding plains, and when we passed over the trail the top was covered with snow, as was most of the mountain. What is most singular, no other peak in the vicinity has been found to have gold. From Weaverville to Prescott you find a great many quartz boulders; indeed, every few yards you travel over you find more or less quartz rock. You pass through no other town before you arrive at Prescott. Many of your readers have doubtless travelled through Mariposa; if so, they will be astonished when I inform them that around Prescott, and extending in the west and southwest as far as I went, there is more quartz rock floating on the surface of the ground than there is in Mariposa, and as to the number of ledges there is no telling, or can I give an adequate idea. Suffice it to say, that in all the districts you can find a ledge every few yards, and what is more, from all, with the exception of a few monstrous large ones, you can get a good prospect of gold. Three miles from Prescott, in a southeast direction, is a mountain or peak of quartz. It is probably 300 feet in diameter, but none of the rock has any gold in it, so far as the out-rock shows yet, though no one has sunk into this mountain. It is called the father of the ledges. Before I describe any of the ledges which I have visited, I wish first to speak of Prescott and the surface mines. Prescott is situated near the 35th parallel, about the centre of Arizona. The surrounding country is covered by large pine trees, and there were, at least when I was there, several running streams of water. The town contains about 500 inhabitants, all Americans, and a great many families are living in the town. The houses are built of wood, and there are a good many stores. The town boasts of one weekly newspaper, the Arizona *Miner*, which is the best edited paper I have seen in the Territory. There is one saw-mill, which is run by steam and kept busy nearly all the time, as at the time I was there, there was a great demand for lumber. There are two grist-mills, both running by water power. The valleys are many, some being farmed and others not. The farmers this year have or will put in nearly 10,000 acres of land in corn, wheat and barley. The placer mines around Prescott are quite extensive. Most of the miners are mining on Walker's or Sioux creek; near its mouth is a hydraulic claim said to be paying finely. On Granite creek there are a great many at work, also on Turkey creek and in the Big Bug creek. The miners are said to be making from $8 to $16 per day. I visited quite a number of ledges about Prescott, and found them very large, varying from five feet to ten feet in width. No ledges were being worked upon but the Eugenia, the Chase, and the Sterling, which are all gold bearing quartz, and the Chance, which is a silver ledge. The Eugenia ledge is situated about 15 miles from Prescott. It is six feet wide; the nature of theore is sulphurets, which is said to be very rich, as they have had a good deal of work assayed. It belongs to the Big Bug company, who have erected a ten-stamp mill, and have put in an engine capable of running a great many more stamps, together with the necessary machinery, for the proper reduction of the ore. Owing to the refractory character of the ore, the mill is not running, but the company are getting out rock so as to be able, when any one comes along who understands working sulphuret quartz, to commence operations immediately in the mill. The Chase ledge is being worked, and the owners are putting up a 10-stamp mill, to be run by steam. The ledge is said to be seven feet wide, but I did not see it. I have examined the rock, which is rich, but I suppose it will, like all the rest of the ledges, run into sulphurets. The Sterling ledge was being worked by W. C. Reed, but, owing to his losing quicksilver, has gone to San Francisco for information how to save the quicksilver. The ledge is probably the richest gold ledge on the coast, the working of some of the ore sent to San Francisco by the Varney process yielding nearly $500 to the ton. Mr. Reed, I am informed, uses that process, but, not being versed in the art of saving his quicksiver, did not succeed well. He put in 54 pounds of quicksilver and only got 15 pounds, showing a loss of

39 pounds of quicksilver. What became of the lost quicksilver is a puzzle. Some say it was granulated; others say that it was ground so fine together with the fine gold that it floated on top of the water in the settler, and floated off with the water. The Chance ledge is a silver lode; it is about 4 feet wide. Some of the rock was worked (3 tons) at the Sterling mill by Wm. Reed, which paid over $200 to the ton. The Bully Buena ledge, it is rumored, will also shortly be worked again. This company have a twenty-stamp mill at their ledge. It is said their ore is free gold, while all the others, except the Chase, are sulphurets. There is no use for me to attempt to enumerate the ledges, for there are thousands, and all are said to be good by expert judges; but, owing to two very grave facts, they are not worked, because no one understands how to reduce sulphuret ore and no one has any money. I think here is as fine a chance as ever presented itself to capitalists who wish to invest in mines to operate, for they can make their own terms. There is no doubt of the mines paying. One can now make the trip in safety, as a stage line has been established between here and Prescott, and no one is liable to run any risk of being killed by the Indians, as the stages in the Indian country will be protected by soldiers, and a person can make the trip at comparatively little expense. For the benefit of those who wish to go, I will mention that the mountains of Prescott are covered by very large pine trees, and water necessary for running a mill can be had anywhere (I mean a steam mill.) Game abounds in great abundance, such as deer, antelopes and wild turkeys, and fine fishing can be found in most all the creeks in the large valleys. One going to Central Arizona will be astonished at its beauty and the many advantages it possesses for sustaining a very, *very* large population. The military are making great preparations to conquer the Indians, so as to drive them on reservations; and from the character of the General (Devons) left in command, and from the preparations already being made, I am fully justified in saying that, with the aid of a few more horses and cavalrymen, the Indians will be forced on reservations before another winter.

Washington.

The Olympia *Transcript* says: "It has always been believed by those best acquainted with mineral regions, that the western portion of our country known as the Black Hills abounds in mineral wealth. The aspect of the country shows this, and what little prospecting has been done has proven that there is more or less of the precious metals in most of the streams and gulches. No large deposits have been found, nor do we look for any until a thorough exploration of that region. Different kinds of mineral-bearing rock have been picked up at different times. Last summer, a gray mineral-bearing rock was found in several places which is believed to contain copper. Specimens of nearly pure copper were found in the streams to the west, heading in the Olympic range and emptying into the Chehalis, a few years ago. These streams are undoubtedly rich in other metals.

Oregon.

The Jacksonville *Sentinel* of March 7th is "informed that the claim of McDaniel and Therman, at Sterlingville, is averaging $20 per day to the hand, without any prospect of giving out yet. The claim of Johnson & Co. is paying an ounce per day to the hand. Messrs. Kleinhammer and Mentz are taking out good pay—about $10 per day to each man, and the well known claim of Saltmarsh & Co. is panning out as usual, and its owners getting rich fast. Sterling is by far the richest mining camp in Oregon." ....There has lately been discovered valuable placer and quartz mines in the Pocahontas range of mountains. Capt. Coffin, just from the Ruckle mill and mine, brings flattering reports as to their success, as well as of the mines on Burnt river. Good reports continue to be received from Willow Creek—new discoveries being made every day. At Cañon City times are dull A miner on Cayote Creek, between here and Canyonville, found a nugget of gold in his claim weighing a little over 16 ozs., and worth $273 50.

Minnesota.

A letter from Vermilion, under date of the 18th ult., says: "Vermilion is looking up. I was shown to-day, by Col. Tyndal, a lump of silver as large as a half ounce bullet, the yield of three pounds of rock. The Colonel has got his goods and machinery in, and has commenced to collect rocks from the different veins. An ounce of pure silver is worth $1 29 in coin, consequently the average value of each of the three pounds of rock treated, is upwards of 21 cents—making the yield per ton over $421."

New Mexico.

A correspondent of the Colorado *Register* says that there are about two thousand people in the Cemarron mines at present, and that more are coming daily. There has been about thirty miles of gulch claims taken up within a scope of country of five miles square. Outside of this no prospecting has been done, says the writer.

Canada.

Prof. James T. Bell writes in the Madoc *Mercury* to make some further explanations in regard to the Empire ore exposé, which continues to excite the minds of the good people of that locality. After complimenting the editor of the *Mercury* on the honorable course he pursued in bringing the thing to light, which conduct, by the way, we most heartily endorse as being consistant with the ultimate good of all persons interested, he proceeds to say:—But although it is indeed much to be regretted that the parties concerned should have so far lost confidence in the value of their ore, as to lend themselves to such a questionable transaction, yet their folly, to give it no harsher name, cannot affect the value of the mine, as the analytical assay of Dr. T. S. Hunt places that beyond a doubt; the specimens operated on by him having been taken from the shaft by himself; while his results exhibit a close coincidence with those obtained by myself, three months before his were made public, indeed before Dr. Hunt had seen the mine at all, to which I believe I was the first to direct his attention. My first trial gave a gross value of $483 per ton, but suspecting some loss from an imperfect crucible, I procured a second sample of the ore, which gave a result of $497 per ton of *clean dressed ore*. Dr. Hunt's assay of ore, three-fourths purified, gave $362.20, from which he calculated the value of the *pure ore*, *i. e.*, when clean dressed, at about $500 per ton—a remarkable coincidence. The only point then to be determined is the quantity of ore which the mine is capable of affording. From all I can learn, I am inclined to think that on this score there is nothing to be feared. A number of small veins of pure ore have already been discovered to make an average thickness of fourteen inches, and a single vein of grey copper, bearing one and a-half per cent. of silver, constitute a good paying mine. I hope to have an early opportunity of making a personal inspection of this interesting deposit, when I shall probably trouble you again with my remarks. I thoroughly agree with your proposal of an assayer's license, such license to be granted only on examination by competent authority, and to be cancelled on any proven misconduct on the part of the holder. I hope, however, that a School of Mines will soon be established by the Dominion Government, which will supply a sufficient number of competent persons to conduct assaying, mining, and reducing operations throughout the Provinces.....Mr. E. J. Chapman, Professor in the University College, Toronto, writes to a paper of that city, saying that he has found gold in certain specimens of galena and copper pyrites occurring together in well-defined veins, in the region of Black Bay, lying between the Neepigon river and Thunder Bay, on the north shore of Lake Superior. He collected the specimens personally, in tracing out some of these veins last summer. Caree fully repeated assays have yielded amounts of gold, varying, perton, from fifteen to nineteen dwts., the mean being 17 dwts. 12 grs., with rather more than two ozs. of silver. These results obtained, it will of course be understood from surface specimens only, and from specimens entirely destitute of "free" or visible gold, show a value of nearly $21 per ton, irrespective of the large amount of lead and copper present in the ore. The rocks are identical, in general age, with the gold bearing rocks of Nova Scotia, but different from those at Madoc. Mr. Chapman attaches much importance to the discovery.....In consequence of what the Superior (Wis.) *Gazette* calls the "outrageous mining act," lately promulgated by the Canadian Parliament, the Shuniah Mining company, engaged last season in mining and prospecting at Current river, at a recent meeting held in Cincinnati, "Resolved, that we suspend our contracts for machinery, and all other improvements, at once; and stop all our mining operations on Thunder Bay, District of Algoma, Province of Ontario, in the Dominion of Canada, so soon as we can communicate with the superintendent of our mines." The passage of this resolution means the suspension of operations in the silver district, by the Shuniah company.

British Columbia.

We have Victoria dates of March 24th. From the *Colonist* we glean the following: "Last year the Colony produced $250,000 more gold than during any previous twelvemonth, and the yield of agricultural products of every description exceeded by four fold that of the preceding year. Nanaimo, during 1867, sent away $39,000 worth of gold more than she did in 1866, and the shipments of the same place for the month of February exceeded those of any single month since the mine was opened.....The winter was very severe at Kootenay, and, consequently, little mining was being done. At Rock Creek and Osoyoos Lake, the weather had been very severe, and stock had suffered in consequence. Mining operations on Rock Creek and the Semilkameer had been suspended in consequence of the severity of the weather. The snow was very deep on the mountain trail.....The news from Cariboo is to the 23d of February. The weather had undergone a very decided change, the snow was melting, giving a supply of water for mining purposes, and work had been resumed on many claims on William Creek. Amongst those working were the Bald Head, Hit or Miss, Welch Cariboo, Lillooet, (struck a prospect of $20 to the pan,) Neversweat, (making good wages,) Caledonia, Morning Star, (struck a prospect of $9 to the pan, with pay-dirt ten feet thick.) The Cariboo Company expected in ten days to reach the lead where they took out 190 ounces to one pick in a week when driven out by water. On the evening of the 22d the news reached William Creek that on Canadian Creek a prospect of $1 to the pan had been struck. On Mosquito, the Minnehaha and Willow continued to yield as usual. The weather was very mild in the middle country, and farmers had begun to plough on the Lillooet district."

Mexico.

Files of late Mexican papers furnish the following items of news:—Large gold deposits have been found on the river Coatlan, near the village of that name, and companies are forming for working them. The Indians of the neighborhood are docile, and readily offer their labor. Coatlan is about seventy miles from Oaxaca, which is the nearest large town. At Tetela del Oro much gold has also been discovered.....There are now four hundred natives at work in the placers of the Chihuahua gold district, each earning, by the rudest possible methods, at least five dollars a day. An influx of American miners is expected, with improved machinery. Chihuahua can be reached in fourteen days from New York, by way of Denver, Santa Fé and Paso del Norte.....Mexican papers announce weekly the departure from the capital towards Vera Cruz of a *conducta*, or specie guard, with sums varying from half a million to five million dollars. There is clearly much money in the country, notwithstanding the reported bankruptcy of the government.....Ground has been broken this month for the railroad between Tuxpan and the city of Mexico. An American company, with a capital of $25,000,000, have undertaken the work. Work on the railroad from Vera Cruz to Mexico since the deposition of Maximilian has been very slight, but recently a company, consisting of Vera Cruz merchants, with landed proprietors along the line, has been formed, to continue it, if the Mexican Congress does not confirm the concession granted by Juarez last November. The necessary bridges between Mexico and Puebla are now building. Under the auspices of Mr. Plumb, United States Minister to Mexico, a society has been formed in the city of Mexico for the aid of Americans who may chance to be there in distress. The French, Swiss and Belgian residents of Mexico have united also to form a similar society. A telegraphic line is proposed between the city of Mexico and New Orleans. The work has been taken in hand chiefly by General Escobedo. A submarine cable between Vera Cruz and Cuba is urged by the Mexican press.

Nicaragua.

The Panama *Star & Herald* informs us that the directors of the Javali company, operating in Chontales district, have appointed a new commissioner, who bears [illegible] has had sixteen years practical experience, is thoroughly acquainted with every branch of gold mining. It is important to know, it continues, that the directors are taking decisive measures for placing the management on a footing that shall ensure every consideration for economy in the expenditure, as well as far more regularity in the remittances from the mines. There seems good reason to hope that a most beneficial change will speedily result. The first report from the newly-appointed commissioner upon the several mines, and also upon the practical effectiveness of the erected machinery, will be looked forward to with considerable interest. This will be received about April or May.

Africa.

Gold discoveries are reported in new regions of South Africa. The Natal papers say that two large gold fields have recently been discovered—one near the Zambesi river, and the other about nine hundred miles northwest of Natal. The latter gold field is said to be sixty miles long and twenty broad, and gold is found in quartz.

COPPER.

Michigan.

The National mine for the month of March produced as follows: Stamps, 21 tons, 220 lbs.; mass, 2 tons, 1,919 lbs.; total, 24 tons, 2,169 lbs. The Pittsburg & Boston Co.'s Cliff mine as follows: Mass, 66 tons, 580 lbs.; barrel, 22 tons, 1,416 lbs.; stamps, 26 tons, 1,007 lbs.; total, 115 tons, 2,003; and the Calumet, 57,745 tons .....The *Gazette*, April 23, says that at the Huron mine about 170 men are employed in all the departments at present. Everything in the various mills is working quite satisfactorily, especially in the Stamp mill, which is in better condition than at any previous time. The mineral obtained in March was about 15 tons, but will probably be reported with the April product.....On Monday the underground force of the Isle Royal struck for higher wages, but the matter was settled the next day .....At the Medora, the Amygdaloid belt, corresponding with that formerly considered so productive, in the old Northwest, and probably with No. 7 of the Cliff, has been cut, and is looking remarkably well, though the drift has not yet reached the hanging wall.....The National Stamps have recommenced work..... At the Delaware the "East vein," distant from the present working vein about 115 feet, is improving very much for the better, and good results may be looked for in this quarter; where opened at the 20-fathom level it is fully four feet wide and carrying excellent stamp and barrel work. Prospects at the fiftieth Delaware vein are very encouraging and present a very flattering appearance. Stamp mill has been at work and is doing good duty.....On Friday last the west foundation walls of the Hecla stamp mill, containing the rock bins, gave way under the pressure of the rock contained, said to be 550 tons. As near as we can learn, a portion of the wall around the stamps foundation, and a portion of that under the building have fallen. It is stated the mill will resume work Friday or Saturday. The foundations of the stamps are reported as unmoved. The Ontonogon *Miner* gives the total product for March of the Superior mine at 2 tons, 345 lbs., and of the Rockland, 9 tons, 230 lbs.

Colorado.

The Georgetown *Miner*, of April 16, says that an assay of a specimen of copper ore from Coal Creek, Jefferson county, gave a return of 32 per cent. pure copper. The assay was made for Dr. S. B. Morrison by Messrs. Burlingame & Moor, and was an average of nine feet of the crevice. The lode was discovered two years ago, but was not developed till last season. It is called the Partridge lode.

Montana.

The news from the Beaver Town copper mines, as chronicled in the Montana papers, is truly encouraging. A ledge from twelve to fifteen feet thick is well defined, and beyond doubt very rich, the average ore containing nearly ninety per cent. of pure copper. The *Herald* adds: "This is an unprecedented yield, but is nevertheless a fact. Boulders of solid native copper, weighing from ten to fifty pounds, have been taken out of the shaft."

MISCELLANEOUS.

Maine.

"The extent of the undeveloped territory of Maine can hardly be appreciated except by travelling through it," says the Boston *Commercial Bulletin*, in a lengthy article on the resources of that State. Away in the depths of the wilderness of Piscataquis, Penobscot and Aroostook counties, it continues, lie the rich primeval treasures of the forest and mine. This undeveloped region, extending up, between New Brunswick and Canada East, to nearly the 48th parallel of north latitude, possesses a soil of great fertility, which, when cleared, produces abundant crops with very little cultivation. Indeed, the Madawaska settlements, about the headwaters of the St. John, are destined to become the garden of Maine. Among its mineral resources have already been found iron and slate in great abundance—the former coming to us in the shape of the finest charcoal pig metal, and the latter cropping out in inexhaustible quarries, of a quality much superior to that imported from Europe. Traces of the precious metals, including gold and silver, have also been found in the mountainous district, and it is highly probable that further geological researches will result in the discovery of coal. These mineral deposits are now worked at a great disadvantage and upon a small scale, from the fact that their products have to be transported, at great expense and labor, over rough wagon roads, to the various shipping points. But when the lines of railroad now projected, diverging northward from the Main Central trunk, and piercing the upper tier of counties, shall have been built, these products will yield a much larger profit to the miner, besides being laid down in the markets in greater abundance and at less cost.

Colorado.

The coal question which has had an important bearing upon our railway interests, says the Denver *News*, seems to be definitely settled. There is now no doubt but that enough of this article exists on the present line to warrant no further fear on this subject. On Saturday evening Gen. Pierce stated to the Board of Trade that, beside the vein of thirty-one inches discovered near fort Dupton on the Platte, there were also two veins on the Cache la Poudre, near our railway line. One of these veins was four feet thick and the other was about eighteen inches. Some one who had been working there, said it was nine feet thick, but for this statement there was, as yet, no certain evidence. The existence, however, of coal in such quantities on the line, settles the railroad question definitely.....The Salina *Herald* says that, in digging a well on the east side of the Smoky Hill river, less than two miles from town, a vein of good bituminous coal, eighteen inches thick, and about twenty feet below the surface was dug through.

Missouri.

The *Yeoman* says: The company who are now working the Hazelwood Lead mines take up from 800 to 1,200 pounds of ore daily. The mineral of these mines is very fine; and if the [illegible] were prepared with the necessary machinery, they would no doubt raise three or four times the amount of mineral they now raise. Col. George L. Childress, late of the *Yeoman*, is now engaged with the company in working these mines. He informed us last Monday that they would have their smelting machine in operation by the last of this week. There is no doubt that there is an almost inexhaustible amount of mineral in these mines. Capital is all that is wanting to develop this great source of wealth. There are lead prospects in other parts of Webster county; but we can have no hope that any more mines will be opened until capital is brought to the country.

California.

The Napa *Register* has the following in regard to the quicksilver mines in that county: The quicksilver excitement is awakening somewhat. The machinery for the Washington and Valley mines, which has been lying in Chiles' cañon for the last six weeks on account of the bad roads, we got under way on Monday, and by this time is likely being put in working order. The reports from the Star company's ground, at Pine flat, are very flattering, and it is hoped that the company will soon commence work. A very few weeks will find a large number of men at work in the different claims, and unless all signs fail, Napa will become as noted for its quicksilver yield as it is now for its wheat and babies.

Cerium.

This metal has lately been separated by Woehler from the double chloride of cerium and potassium by means of sodium. Formerly it was prepared by subjecting pure protochloride of cerium to the action either of potassium or sodium. Cerium is found in comparatively rare minerals, and generally associated with the metals lanthanum and didymium. Cerium tarnishes in air at ordinary temperatures, and displaces hydrogen in boiling water. The pure metal is therefore valueless, except as a reagent. It forms numerous oxides and salts, none of which have, as yet, been much used in the arts. Cerium has a darker blue than lead, and is only about one half as heavy.

MARKET REVIEW.

FRIDAY EVENING, May 8, 1868.

Gold and Silver Stocks.—The market exhibits but little life. Nevada stocks are without material change since our last. Some Colorado stocks are a shade stronger. Prices are thus quoted at the mining board:

	Bid.	Asked.		Bid.	Asked.
Alameda Silver	60	1 00	La Crosse Gold	— 36	41
American Flag	— 30	50	Liberty Gold	— —	4
Atlantic and Pacific	— —	— 80	Manhattan Silver	110 00	140 00
Bates & Baxter Gold	— —	— 50	Midas Silver	— —	— 70
Benton Gold	— 15	— 22	Montana Gold	— 35	— 40
Black Hawk G	5 25	— —	New York	— 57	62
Bobtail Gold	1 00	1 50	New York & Eld'o	— —	1 75
Bullion Consolidated	— 40	1 00	Nye Gold	— —	— 4
Columbian G. & S.	— —	— 6	Owyhee Mining	15 00	— —
Combination Silver	30 00	45 00	Ophir Gold	— —	— —
Consolidated Gregory	2 90	2 95	People's G. & S. of Cal	— 5	— 20
Coryaon Gold	— —	— 35	Quartz Hill	— 90	— 95
Edgehill Mining	2 50	3 00	Reynolds Gold	— —	— 4
Gold Hill	— —	1 00	Rocky Mountain Gold	— 10	— 18
Gunnell Gold	— 50	— 80	Smith & Parmelee Gold	2 25	2 35
Gunnell Union	— —	45	Sensenderfer	— —	7 00
H'n G & S. bs	— —	85	Symonds Fork Gold	— —	1 00
Harmon G. & S. bs	— —	3 00	Texas Gold	— 5	— 12
Holman	— 4	10	Twin Riv Sil	— —	70 00
Hope Gold	— —	20	Burroughs	— 8	— 12
Kipp & Buell Gold	— 5	15	Empire	— —	— —
Keystone Silver	— —	— —	Vanderburg G	— —	— 75

Copper Stocks.—Davidson is stronger, and is quoted at 42c.; $4 is given as the selling price for Ogima. Prices at the board rule as follows:

	Bid.	Ask'd.		Bid.	Ask'd.
Caledonia C	— —	10 00	Hilton	— 50	1 00
Canada	— —	— 50	Knowlton	— —	2 00
Davidson	42	44	Minnesota	3 50	4 50
Charter Oak	— —	1 00	Ogima	4 00	5 00
Gardiner Hill	— —	1 00	Rockland	— —	4 00

Petroleum Stocks are dull, and many are quoted a shade lower. Union has advanced to $3 50. Board prices range:

	Bid.	Ask'd.		Bid.	Askd'.
Bennehoff Run	1 00	1 40	N. Y. and Alleghany	1 00	2 75
Brevoort	....	50	Pit Hole Creek	50	70
Buchanan Farm	38	43	Rathbone Oil Tract Co	....	....
Central	30	60	Rynd Farm	7	12
Clinton Oil	75	1 50	Sherman & B	25	....
Columbia	....	....	United Pet. Farms	....	12
Manhattan	....	5	United States	1 65	1 70
National	1 00	3 00	Union	3 50	....

Miscellaneous Stocks.—Quicksilver Mining is quoted at 32½; New York Central 129⅜; Erie, 69⅜; Reading, 91⅛; Michigan Southern, 84⅜; Rock Island, 94⅜; Pacific Mail, 93⅛; Western Union Telegraph, 38⅛; Adams' Express, 61⅛@61¾; American, 61; United States, 60@61; Wells, Fargo & Co., 22⅝@22¾; Merchants' Union, 35 per cent., 31½@31⅝; Walkill Lead, 20@23c.; Rutland Marble, $16.

Government Stocks are quite firm, with little demand for home investment. Prices are quoted to-day as follows:

U. S. 6s, 1881, coupon....113⅛@113⅜
U. S. 5-20s, 1862, coupon....108½@108⅝
U. S. 5-20s, 1864, coupon....106⅜@106⅞
U. S. 5-20s, 1865, coupon....106 @101⅛
U. S. 5-20s, July, 1865, coupon....109⅛@109⅜
U. S. 5-20s, July, 1867, coupon....109⅛@109⅜
U. S. 10-40s, coupon....103⅛@103⅜
U. S. 7-30s, June, large....107⅜@107⅝
U. S. 7-30s, July, large....107⅜@107⅝

Foreign Exchange is firm on the basis of 110½@110¾ for sixty days prime bankers' sterling. In some instances good bankers' sight bills are offered at 110¾. The following are the current rates:

London, (prime bankers')60 days'....110⅛@110¼
London, (prime bankers') sight....110⅜@110⅝
London, prime commercial....— —
Paris, (bankers') long....5.12½@ —
Paris, (bankers') short....5.10 @ —
Antwerp....5.15 @5.12½
Swiss....5.15 @5.12½
Hamburg (bankers')....36⅛@36⅜
Amsterdam (bankers')....41⅛@41¼
Frankfort (bankers')....41 @41⅛
Bremen (bankers')....79⅛@80
Berlin (bankers')....71⅛@72

Gold continues steady at 139⅛@139¾

American silver is in moderate demand at 6@7c. below the price of gold. Mexican dollars are still quoted at 103½@103¾ in gold.

The money market has an easier aspect. The banks are offering money more freely this morning, and the transactions on call at 6 per cent. are becoming more general, but 7 per cent. is still the predominant rate.

The discount market is less active. Prime paper passes readily at 6½@7¾ per cent. There is a diminished supply of the better grades, and the present indications are that money will be more freely offered on call, owing to the scarcity of paper.

The following will show the exports of specie from the port of New York for the week ending May 2, 1868:

April 27—Brig L. & W. Armstrong, Ponce—
American silver....10,000
April 27—Schooner C. C. Bearse, Ponce—
American silver....15,000
April 28—Steamer Teutonia, Hamburg—
American gold....55,000
Silver bars....152,458
April 29—Steamer Scotia, Liverpool—
Gold bars....56,500
American gold....100,000
For Havre—American gold....75,000
April 30—Steamer Hermann, Bremen—
Foreign silver....1,200
American gold....25,000
For Paris—
Silver bars....46,000
Bullion....645
April 30—Steamer Eagle, Havana—
Spanish gold....5,320
May 1—Steamer Virginia, Liverpool—
Gold bars....84,000
May 2—Steamer Pereire, Havre—
Gold coin....200,000
Gold bars....229,592
American gold....105,000
Gold bars....28,700
Foreign coin....1,500
Foreign silver....30 000
American gold....50,000
May 2—Steamer City of Baltimore, Liverpool—
American gold....80,843
British gold....4,840
May 2—Steamer Missouri, Havana—
American silver....5,293

Total for the week....$2,431,891
Previously reported....20,390,047

Total since January 1, 1868....$22,821,938
Same time in 1867....9 384,281
Same time 1866....7,136,215

Dr. H. R. Linderman, Director, furnishes the following statement of deposits and coinage at the United States Mint during the month of April, 1868:

DEPOSITS.

	Value.
Gold deposits	$295,828 59
Silver deposits and purchases	26,656 13
Total deposits	$322,484 72

COINAGE.

Gold coinage	6,839	$148,095 32
Silver	136,209	44,835 43
Nickel and copper	2,712,000	113,760 00
Total	$2,855,048	$306,690,75

We are indebted to Messrs. Platt & Newton for the following financial advices from San Francisco, dated April 14:

"Our domestic money market exhibits renewed activity, the result of legitimate demand for money, growing out of spring trade requirements. We quote 1 per cent. per month as being the figure at which the savings and loan associations are affording accommodations, repayable in instalments. Good paper is done at 1¼ per cent. per month. Long loans are effected at 10@12 per cent. per year. Bullion is in greater supply, and prices show a considerable recession since our last quotations. Gold bars are selling at 890@900 now, against 910@915 on the 6th inst. Silver bars are fluctuating between ¼ per cent. discount and ¼ per cent. premium. Currency bills on Atlantic cities, 37 per cent. premium on gold. Sight drafts, payable in coin, ¾@1 per cent. Telegraphic transfers, 1@1¼ per cent. Sterling exchange, 49¾@49d. Commercial do., 49¼@49½d. Mexican dollars, 4½@5⅛ per cent premium. Exchange on France, 5 francs for 30 days' bills.

The shipments of treasure from April 1 to date have been as follows:

April 4—Per Active to Victoria....$50,000 00
April 6—Per Golden Age—
To New York....$427,880 24
To France....36,698 85
To Panama....10,000 00
474,579 09
Total since April 1, 1868....624,579 09

Previously this year....9,616,707 59

Total since January 1, 1868....$10,141,286 68
Corresponding period 1867....10,760,768 33

Decrease this year....$619,481 65

Copper—Is quiet but firm. Since the circular published elsewhere 150,000 lbs. Detroit has been sold at 24c., and 100,000 lbs. Portage Lake at 23¾c.; and 75,000 lbs. Baltimore at 23½c.

Tin.—Sales of 1,100 slabs Straits at 23⅞c.@24c. gold; 100 Banca, 27½c. gold. English is scarce and sold in small lots at 24½c. gold.

Spelter.—Unchanged.

Lead.—Unchanged.

Pig Iron—Is very dull but firm. Scotch pig at $40@41 American No. 1, $38@40.

Antimony.—16c. currency.

Petroleum—Is firm at 14c.@14½c. for crude, and 30½c. for refined, in bond.

Receipts for the week ending May 5, 1868....276,324 bbls.
" " " " " 1867....337,857 "
Decrease....61,533 "

Export from 1st of January to May 5:

	1868.	1867.
From New York....galls.	13,525,943	8,846,131
Other Ports	9,537,665	6,884,250
Total Exports from the United States	23,063,608	15,730,381
Same time 1866		16,064,665
Same time 1865		3,600,109

Stock in yard May 1:

	1868.	1867.
Crude....bbls.	*32,737	10 051
Refined	*23,319	33,486
Naptha	1,218	399
Residuum	183	186
Total	57,457	44,122
Stock March 2	54,334	44,432

*Including 5,600 bbls. crude and 4,000 bbls. refined on shipboard.

The amount of coal exported from the port of New York, for the week ending May 5, was:

Exports for the week....tons.. 1,412
" from January 1....15,300
" same time last year....19,091
Decrease....3,791

THE IRON TRADE.

NEW YORK, May 8, 1868.

Domestic.—PIG IRON.—The market for American pig iron is quiet, with but few sales. We note 200 tons No. 1 Thomas, at $40; 100 tons Allentown, at $40. Some 300 tons Allentown have been sold from second hands on private terms. About all the lots from second hands have been sold, and the market is firmer. We quote No. 1 at $38@40. There is rather more inquiry for Scotch pig iron, with sales of some 600@700 tons at $39 for Englington, $40 for Glengarnock, $41 for Gartsherrie, ex-ship.

RAILS.—There has been considerable movement in old rails, some 2,000 tons having been sold at $45 50@46 00, on the spot and to arrive. Sales also of 250 tons old T rails, American, at $47 per ton; also 100 tons extra quality D H rails $50 per ton cash. We notice also 2,000 tons new American rails at works, on private terms.

Bar from store continues inactive at old prices.

BOSTON, May 6, 1868.

Pig iron is in steady but moderate demand, with sales of Gartsherrie and other brands, Scotch No. 1 pig at 42@44 per ton; and American pig at $40@45 per ton, as to quality. Bar iron is selling at previous prices, but continues in moderate demand. In Russia sheet iron nothing of any consequence has been done. Prices are nominally 12c. per lb. gold.

BOSTON, May 5, 1868.

Pig iron continues dull but prices are unchanged; sales of Anthracite at $38@39 for No. 1; $36@28 for No. 2; $33 50@34 00 per ton for hard. Manufactured iron is firmly held at full prices.

Foreign.—We have advices from London to the 25th ultimo. A correspondent of the *Guardian* writing from the North of England districts, represents the manufactured iron trade as being quieter. He says:

"Several extensive foreign rail orders which it was expected would come to this country, have been taken by Continental firms at prices about 5s. under the lowest English quotations. Probably upwards of 40,000 tons of rails have been lost during the last fortnight, or sufficient to have kept the mills in this district fully occupied for three months. Last year a very large proportion of these Russian orders came to England, and the north secured a considerable portion of them, consequently rail makers were fully occupied. The continued drifting away of extensive contracts like the these indicates that Belgian and Prussian manufacturers must possess very tangible advantages over us, or they would not be able to undersel English firms in the manner they do, seeing also that the pig iron required for manufacture is to a large extent imported from the Cleveland district. The statements of Mr. Isaac Bell relative to the nature of our competition with Continental nations, receive singular confirmation from this state of things. The Belgians and Prussians have to pay more for coal and more for pig iron, which, in fact, they import in large quantities from England, and yet having an advantage of from fifteen to twenty-five per cent. in their favor, as far as the cost of labor is concerned, they are able to beat our manufacturers out of the market. These facts are naturally raising a good deal of discussion amongst those most deeply interested in the manufacture of iron. It is clear that a further economy will have to be devised, though it is difficult to see in which direction it can be best brought about. As a matter of fact, the various rail mills are now tolerably well occupied, but it is intimated that contracts are running out rather fast, and the order books are getting low."

The iron trade of South Yorkshire still continues favorable at several of the large establishments, with every prospect of its increasing as the season advances and communication with the north of Europe is resumed. In rails, sheets, plates, and hoops, as well as in machinery, there is a fair demand, whilst the most of the furnaces are kept in blast. The large steel works at Penistone, which have been doing but little lately, are exhibiting symptoms of renewed activity. Sheffield has rather better orders from America—chiefly for files and tools. Steel railway rails are also being exported very freely.

The aspect of affairs in South Staffordshire is still very far from satisfactory. The distance between the masters and the men is still unsettled, though a considerable number of them have gone in. A correspondent at Wolverhampton, estimates that over 3,000 puddlers, shingiers, rollers, and other ironworkers are out of employment.

From Newport, South Wales, we learn that export inquiry is without change since last report, and the America and Russian markets continue by far the largest customers.

Boston Imports of Pig Iron from January 1 to May 1, 1868.

	1868.	1867.
From Great Britain, tons	1,673	11,380
Coastwise Ports	3,633	2,811

Lehigh Valley Iron Trade.

The following table shows the amount of Pig Iron transported over the Lehigh Valley Railroad for the week ending May 2, 1868, and for the season to that date.

From	Tons.	Total
Carbon Iron Co	210	3,875
Lehigh Valley Iron Co	390	4,270
Thomas Iron Co	370	10,335
Lehigh Crane Iron Co	810	8 650
Allentown Iron Co	400	4,410
Robert Iron Co	290	3,805
Glendon Iron Co	600	9,060
Other shippers	800	4,987
Total	3,870	49,392

Market Prices.

NEW YORK, May 8, 1868.

DUTY.—Bars, 1 to 1¼c. per lb.; railroad, 60c. per 100 lbs.; boiler and plate, 1¼c. per lb.; sheet, band, hoop and scroll, 1¼ to 1¾c. per lb.; pig, $9 per ton; polished sheet, 3c. per lb. Payable in gold.

		STORE PRICES.	
Anthracite, No. 1, best.	$38 00@40 00	Bar, Swedes, ord'y sizes	— — 150 00
" " 2x, fdry,	36 00 38 00	Bar, Eng. and Am., rl'd	95 00 100 00
" Grey Forge,	33 00 36 00	Bar, Eng. & Am., com.	85 00 90 00
Scotch Pig, No. 1	39 00 43 00	Sceoll	125 00 170 00
Charcoal, coal blast	50 00 60 00	Ovals and half round	120 00@130 00
Old Wrought sc'p, fm yd.	49 00 — —	Band	130 00 — —
" " " fm. vsl.	46 00 — —	Horse Shoe	125 00 — —
English rails, gold	52 00 53 00	Rods, ⅝@3-16 inch	100 00 160 00
American " at works.	75 00 77 00	Hoop	137 50 90 00
American Bar Iron.		Nail Rod, per lb	9 10
Common, per ton	80 00 85 00	Sheet, Rus., Med. Nos.	16 17
Refined, " "	90 00 95 00	Sheet, s'gle, D. & T. com	5 7
Old Railroad Iron	46 00@	Rails, Eng., gold, ton	51 50 52 50
		Rails, American	78 00 80 00

STEEL.

English, cast (2d and 1st quality) per lb	18 @23
English Spring (2d and 1st quality)	10 @12¼
English Blister (2d and 1st quality)	11½ 20
English Machinery	13⅛ 16
English German (2d and 1st quality)	14 16
American Blister, "Black Diamond,"	11⅜ 17
American, Cast, Tool " "	21 22
American, Spring " "	10 13
American, Machinery " "	— 14
American German " "	10 13

PHILADELPHIA, May 6, 1868.

The market for pig-iron is not active. Bars are firm.

Anthracite Pig, No. 1	$36 00@$38 00
" " No. 2	34 00 36 00
Gray Forge	33 00 34 00
Charcoal Wheel	48 00 50 00
" Blooms	90 00 95 00
Scotch Pig	41 00 43 00
Railroad Bars (American)	78 00 80 00
Refined Bar	85 00 90 00
Common Bar	75 00 80 00
Band Iron, 1¼ to 6	110 00 120 00
" 12 to 3-16	
Hoop Iron, 1 and upwards	135 00 ....
" " ⅞	140 00 ....
" " ¾	150 00 ....
" " ⅝	175 00 ....
" " ½	200 00 ....
Nails and Spikes	5 25 ....
" 4d	5 75 ....
" 3d	6 75 ....
" 3d, fine	8 25 ....
Boiler Rivets	7¼ pr. lb
Railroad Spikes	5@6c. "

PITTSBURGH, May 2, 1868.

Pig Iron and Bloom Market.—But a very moderate amount of business has been done in raw irons during the current week, says the *Commercial*. Indeed, we have never known our iron workers to pursue a more conservative policy than during this season. At times when it seemed necessary to the securing of full supplies of desirable stock for mixture, they purchased freely, but there has been a total absence of speculative feeling. Now that the season is far advanced, and a perceptible falling off in orders for their manufactures has been realized, increased caution is manifested in strictly restricting purchases of crude stock to current consumptive wants.

There is, however, but little change in prices of favorite makes of standard forge irons. The demand for such has thus far this season kept pace with production, and from all the information we can command, we feel warranted in saying that in the districts mainly tributary to this market, supplies of raw irons are lighter than at the opening of the year. In low grades and inferior irons, prices are irregular and lower. There is a growing feeling with our merchant bar and nail manufacturers, that there is no economy in using low grad. stock, hence inferior makes are selling at rates relatively lower than formerly, and generally to manufacturers of rails. We are quoted the following sales, which embrace but a portion of the sales of this week:

BITUMINOUS COAL SMELTED FROM LAKE SUPERIOR ORE.

150 tons Medium Gray Forge, from yard....$36 50—4 mos.
100 tons " " " ....36 00—4 mos.
250 tons White and Mottled, deliverable at furnace....32 50—6 mos.
100 tons Open Gray, a fancy brand, " ....35 25—30 dys.
100 tons Strictly Gray, sold at furnace....36 00—4 mos.
100 tons " from yard....36 50—cash.
50 tons " " ....37 50—4 mos.

ANTHRACITE.

100 tons Red Short Forge....37 00—4 mos.
50 tons " " ....private terms.
100 tons " " ....37 00—4 mos.

CHARCOAL.

200 tons Missouri, a Fancy Forge Iron....51 00—4 mos.
375 tons Charcoal Forge....43 00—4 mos.
50 tons Hanging Rock, No. 1 Foundry....45 00—6 mos.
80 tons " " " ....43 00—4 mos.
50 tons " " " ....45 00—4 mos.
50 tons " " " ....45 50—4 mos.

BLOOMS.

Are in light supply; also in light demand; we are reported sales of 30 tons Juniata at $90 00—4 months.

Iron and Nails.—The demand for iron during the past week has been rather inactive, owing in part to the very large shipments by river during last month and first half of the present month. Prices are unchanged. The card rates are so low that manufacturers have no margin for concessions, and unless they can obtain full rates, will be compelled to stop their works.

The demand for nails continues large, and prices are fully maintained, but manufacturers are meeting the wants of their trade.

There is considerable inquiry for sheet iron from the West, and prices are firm.

IRONTON, Ohio, April 30. 1868.

The *Register* says: If the metal market has undergone any change during the past week, it has been toward stagnancy. We cannot learn of any transaction of any import. Inquiries have been fewer than for weeks past. Still prices are firm at old rates. We quote:

Mill, hot blast....$38 00@$40 00
Foundry, hot blast,....40 00@42 00
Cold blast,....55 00@60 00

Receipts for the week 350 tons; shipments 325 tons.

A very slight improvement is noticed in manufactured iron, but not sufficient to rescue it from dullness. One of the mills keep working away at full force. Common bar is held at 3¾@4¼c.

Nails are in good demand at $5 for 10d. The furnace of the Belfont company will go into operation in a few days.

Stoves meet with a good market, and the Ironton foundry is kept busy.

BOSTON, April 29, 1868

Scotch Pig, No 1		English—com	85 90
Gartsherrie	$43@45	do refined	95 100
No. 1, other brands	42 45	do sheet, per lb	6½@10c.
American, No. 1	40 45	Russia, sheet	16@17c
Swedish—common ass'd	$150@155		

SAN FRANCISCO, April 6, 1868.

Holders of Pig Iron continue firm in their views. Sales in lots rule from $42 50 and upwards for Scotch and other desirable kinds.

Scotch & Eng. Pig, ton	42 50@— —	Boiler, 1 to 4	— — — 3½
American White, Pig	45 — —	Plate, No. 5 to 0	— — — 3⅛
Refined Bar, bad assortment, per lb	— — — 2	Sheet, 10 to 13	— — — 3¾
		Sheet, 14 to 20	— — — 4
Refined Bar, good assortment, per lb	— — — 3	Sheet, 24 to 27	— — — 4

LONDON, April 18, 1868.

Bars, Welsh in Lond.	£6 2 6	.. ....	Do. railway, Wales.	£5 5 0	£5 10 0
Ditto to arrive	6 2 6	.. ....	Do. Swd. in London	10 0 0	10 5 0
Nail rods	6 15 0	7	To arrive	10 0 0	10 5 0
" Stafford in Lond.	7 7 6	8 10 0	Pig, No. 1, in Clyde.	2 13 3	2 17 9
Bars	7 5 0	8 10 0	Do. f.o.b. Tyne, Tees.	2 9 6	.. ....
Hoop	8 5 0	9 10 0	Do. Nos 3, 4, f.o.b. do	2 6 6	2 7 0
Sheets, single	9 0 0	10 0 0	Railway chairs	5 10 0	5 15 0
Pig, No. 1, in Wales.	3 15 0	4 5 0	" spikes	11 00 0	12 0 0
Refined metal, ditto.	4 0 0	5 0 0	Indian Charcoal Pigs		
Bars, common, ditto.	5 7 6	5 10 0	in London, pr. ton,	7 0 0	7 10 0
Do. merch. Tyne or Tees	6 10 0	....			

STEEL.

Swed., kegs (rolled)	14 5 0	Swed., in faggots	16 0
" (hammered	15 15 0 15 00 0	English, spring	17 0 0 23 . 0

Iron.—In Staffordshire the result of the quarterly meetings has not encouraged the expectation of any speedy improvement in the state of the trade in South Staffordshire. The present consequence of the notice of reduction in wages in South Staffordshire is, that the men have struck. It is not, however, apprehended that the strike will last long; however, in the meantime, it very much interferes with business, and it is much to be regretted that some plan cannot be adopted, with the consent of both masters and men, by which these deplorable strikes might be prevented, and a fair rate of wages established. In Welsh, contracts for rails are being carried forward with greater freedom, principally on foreign account, and the home railway companies are making preparations for considerable purchases. Last month the exports reached 5154 tons, of which New York alone took 3725 tons, and there is a prospect of a further increase in the shipments to America. Pig iron is in active demand, prices having a tendency to stiffen. In Swedish iron the amount of business transacted is only moderate. In Scotch pig iron the market has been quiet, but pretty steady during the week; the prices at one time advanced to 52s. 6d. cash, but afterwards declined to 52s. 3d. cash.

THE COAL TRADE.

NEW YORK, May 8, 1868.

Trade is unmistakably dull, every department in the business plainly indicates it, but prices remain firm and in fact in many of our quotations this week dealers will note an advance. A few weeks ago we notified the trade that there would be an advance from the then low rates, and everything now transpiring indicates that we were right in our calculations. Good qualities of coal in this market to-day find a ready sale, and were it not for a large amount of "trash" that the New York market is constantly being flooded with, we would not have occasion to note a dullness in the trade. The Honey Brook Coal Company, whose men were "out" by a strike a few weeks ago, have, we understand, acceded to the demand of their miners upon the grounds that it was a case of necessity with them in order to obtain a livelihood. The other Lehigh operators will no doubt follow suit. These and other movements will have a tendency to enhance the value of coal, which is to-day sold to the public lower in proportion to its real value than any other article of consumption. We, therefore, again call the attention of retailers to these facts, and state that they can save money by buying their coal now.

Freights remain steady. Some few changes have, however, been made in our tables.

Foreign coals are quiet. American gas coal is in better demand. The gas companies are beginning to realize the value of it for their use.

BOSTON, May 6, 1868.

In English cannel coal very little has been done, with sales at $20 per ton in small lots. Picton has been selling at $7 50@7 75; and Sidney is quiet and nominally $8 00@8 25 per ton. Cumberland has been selling at $8 00@8 50; and cargoes delivered at Baltimore $4 75, and at Georgetown $4 36 per ton. In Pennsylvania and Westmoreland gas the sales have been at $7 20 per ton,

delivered in Philadelphia. Anthracite has been selling at $5 50@6 50 by the cargo, and $6 00@7 50 per ton for retail lots, as to quality.

PHILADELPHIA, May 5, 1868.

The market continues dull. We quote Locust Mountain lump and steamboat at $3 50; do. broken, $3 50@3 65; do. egg, $3 90@4 10; stove, $4 00@4 25; red ash, egg, and stove, $4 10@4 50; Lehigh lump, steamboat, and broken, $5; do. prepared, $5; do. chestnut, $4 25.

The following table exhibits the quantity of Coal passed over the following routes of transportation for the week ending May 2, 1868:

	1867.		1868.		INC. OR DEC.	
	WEEK.	YEAR.	WEEK.	YEAR.	WEEK.	YEAR.
Phil. & Reading R. R.	67,479	1,013,638	78,720	1,007,510	i 11,241	d 6,128
Schuylkill Canal	22,942	170,118	30,933	144,422	i 7,991	d 25,696
Lehigh Valley R. R.	49,148	568,002	49,429	824,581	i 280	i 256,579
Lehigh Canal	31,985	81,169	28,144	77,145	d 3,841	d 4,024
Scranton North	9,031	121,933	8,109	125,652	d 922	i 3,719
" South	29,532	427,125	26,965	357,634	d 2,567	d 69,491
Penn'a Coal Co. Rail	19,865	215,081	21,193	224,492	i 1,328	i 9,411
Penn'a Coal Canal	1,303	3,146	708	2,457	d 595	d 689
Del. & Hudson Canal	36,360	226,445	41,416	172,263	i 5,056	d 54,182
Shamokin	7,780	132,440	9,935	121,726	i 2,155	d 10,714
Trevorton	1,768	7,403	426	5,942	d 1,342	d 1,461
Short Mountain	2,310	9,256	2,508	14,268	i 198	i 5,012
Lykens Valley C. Co.	1,796	15,554	58	23,815	d 1,738	d 1,737
Broad Top	5,557	74,309	5,772	71,403	i 215	d 2,966
W'mstown Col'y, E.	.....	20,784	4,189	45,025	....	i 24,240
Total	286,856	3,086,403	304,316	3,218,335	.....	.....
	.....	.....	286,856	3,086,403	.....	.....
Increase	.....	.....	17,460	151,932	.....	.....

Schuylkill Coal Trade.

BY RAILROAD AND CANAL, FOR WEEK ENDING MAY 8, 1868.

	RAILROAD	CANAL.
St. Clair	31,378	.....
Port Carbon	6,449	14,581
Pottsville	1,935	1,274
Schuylkill Haven	15,828	21,164
Auburn	3,632	.....
Port Clinton	3,748	1,773
Total for week	62,074	38,793
Previously this year	1,073,064	145,413
Total	1,007,510	184,107

Cumberland Coal Trade.

By B. & O. RAILROAD.—The shipments over the Baltimore and Ohio Railroad, for the week ending May 2, were as follows:

From Cumberland & Pa. R. R., via Cumberland:	
Consolidation Company	2,091 15
Borden do.	1,184 05
Midlothian do.	.....
New Hope do.	.....
Midland do.	11 06
From George's Creek via Piedmont.	
George's Creek C. & I. Company	1,615 07
Savage Mountain	57 11
Central "	2,914 09
Atlantic "	579 19
Piedmont "	1,137 04
American	2,154 19
Swanton "	645 09
Potomac "	1,281 03
George's Creek Mining	.....
Hampshire	2,631 09
Franklin "	117 15
Total	16,452 10
From Eckhart Railroad.	
C. C. & I Co.	1,806 03
Total	18,258 13

BY C. & O. CANAL.—There were despatched from the port of Cumberland, during the last week, 127 boats, laden with 14,339 07 tons of coal, forwarded by the following companies:

American	4,192 14
Borden	1,750 13
Central	3,967 17
C. C. & I.	1,963 03
Consolidation	1,855 11
H. & B.	1,509 09
National	.....
Total	14,339 07

Report of Coal Transported over Lehigh Valley Railroad and Canal

For the week ending May 2, 1868, compared with same time last year:

SHIPPERS.	RAILROAD. Week. Tons.	RAILROAD. Total. Tons.	CANAL. Week. Tons.	CANAL. Total. Tons.	Grand Total.
FROM MAUCH CHUNK.					
Summit Mines	....	....	11,776	34,069	34,069
Total	....	....	11,766	34,069	34,069
WYOMING REGION.					
Franklin Coal Co	....	....	....	....	....
Andenried	....	50	....	....	....
Lehigh & Susquch'na	....	....	....	....	....
Germania Coal Co	....	4,759	284	665	5,424
Wilkes Barre C. & I.	242	13,044	2,785	10,785	23,809
Warrior Run	669	10,700	....	....	....
Parish & Thomas	1,111	25,953	341	1,178	27,131
New Jersey	101	8,225	95	452	8,677
Union Coal Co	....	2 432	....	....	....
Wyoming C. & T. Co.	....	3,227	....	....	....
Newport Coal Co	....	....	....	....	....
Morris & Essex Mut'l	....	1,241	....	....	....
Consumers	....	....	....	....	....
Everhart Coal Co	....	....	....	....	....
Plymouth Coal Co	....	152	....	....	....
Hillman & Son	84	4,605	....	....	....
Bowkley, Price & Co.	....	149	—	....	....
Mineral Springs	384	7,335	....	....	....
Valley Coal Co	....	....	286	286	286
Enterprise C'y, J.H.S	500	11,455	66	130	11,585
G. B. Linderman & Co	....	....	....	....	....
Washington Coal Co.	....	....	....	....	....
West Pittston	....	....	....	....	....
Barclay	....	....	....	....	....
Shawnee	208	2,585	557	835	3,720
Consumers Coal Co.	193	2,120	....	....	....
Harvey & Bro.	97	1,463	....	....	....
Wyoming Valley	291	1,916	....	....	....
Henry Colliery	84	513	....	....	....
New England	....	230	....	....	....
Del. & Hudson C. Co.	....	11	....	....	....
Other Shippers	....	14	216	1,453	1,467
Total	3,885	102,468	4,633	15,787	118,255
FROM B. M. REGION.					
N.Y. & L. [T.H. & Co	1,856	21,274	283	283	21,559
Honey Brook Coal Co.	....	41,120	94	376	41,496
Ger Pa. Coal Co	....	16,278	473	731	17,009
Spring Mountain	....	33,972	....	95	34,067
Coleraine W.T.C. & Co	2,668	27,200	626	906	28,106
B. Meadow (D. W.)	....	....	....	....	....
John Connery	....	....	....	....	....
Lehigh Zinc Co	....	....	....	....	....
Spring Brook	....	....	....	....	....
Other Shippers	12	151	....	....	....
Total	3,936	139,995	1,004	2,393	142,388
HAZLETON REGION.					
Central Coal Co	....	....	....	....	....
Ashburton Coal Co	....	433	64	64	497
Mt. Pleasant [Halsey	231	7,274	133	202	7,476
Hazleton (A. P. & Co)	6,741	92,221	2,432	5,878	98,099
East Sugar Loaf	5,093	56,927	192	192	57,119
Mount Hall	....	219	....	....	....
Latimer (A. P. & Co)	1,067	14,953	....	....	....
Stout Coal Co	1,422	12,477	483	933	13,410
Harleigh Coal Co	736	21,007	273	1,983	22,990
Ebervale Coal Co	1,791	29,781	1,475	2,886	32,667
Jeddo (G. B. M. & Co)	3,783	52,736	1,906	3,424	56,160
Woodside (J. C. Co.	377	6,117	406	676	6,793
Highland	1,158	25,485	452	1,530	27,015
Cross Creek (C. B.)	572	9,888	285	864	10,752
C'l Ridge [S.W. & Co.	2,025	36,807	1,237	3,124	39,931
Buck Mountain	1,395	25,213	904	2,087	27,300
Other Shippers	....	....	....	....	....
Total	26,397	391,546	10,257	23,547	415,093
U. LEHIGH REGION.					
U. Lehigh Coal Co	859	24,950	472	1,348	26,292
Other Shippers	....	....	....	....	....
Total	859	24,950	472	1,348	26,292
MAHANOY REGION.					
Mt. Rose Coal Co	235	535	....	....	....
Mount Etna Coal Co.	652	1,845	....	....	....
Mahanoy Col. [N.M.M	675	11,109	....	....	....
Coplay Colliery	666	6,016	....	....	....
Glendon	1,284	13,858	....	....	....
Primrose Colliery	946	2,307	....	....	....
E. S. Silliman	1,486	38,235	....	....	....
McNeal Co	3,482	27,684	....	....	....
Knickerbocker	1,406	23,397	....	....	....
Thomas Coal Co	1,121	11,583	....	....	....
Williams & Herring	105	4'610	....	....	....
New Boston Coal Co.	1,656	16,586	....	....	....
Shamokin Coal Co	....	....	....	....	....
Caledonia M. & M	629	8,835	....	....	....
Coal f'm Cataw'sa RR	....	....	....	....	....
Other Shippers	....	15	....	....	....
Total	14,349	165,620	....	....	151,270
Grand Total	49,429	824,581	28,144	77,145	901,726
Same time last year	49,148	568,002	31,985	81,169	649,171
Increase	280	256,579	....	....	252,555
Decrease	....	....	3,841	4,024	....

Prices of Coal by the Cargo.

[CORRECTED WEEKLY.]

At New York, May 8, 1868.

Schuylkill R. A., choice	$6 00@$....	Schuylkill Chestnut	4 50 ....
" Ordinary	5 75	Lehigh W.A Lump Old Co	5 00 ....
" W. A., Lump	5 00	Lehigh Broken	4 87½ ....
" Steamboat	5 00	" Egg	4 87½ ....
" Broken	5 00	" Stove	5 12½ ....
" Egg	5 50	" Chestnut	4 37½ ....
" Stove	5 50		

SPECIAL COALS.—DEALERS' QUOTATIONS.

Diam'd Vein R. A., Sch'kill	6 00	Old Co.'s W. A. Lehigh	5 50 ....
Locust Dale W. A., "	5 50	Mt Pleasant	5 00 ....
Honey Brook " Lehigh	5 50	Broad Mountain	....
Harleigh " "	5 50	Buck Ridge W. A., Sh'kin	....
Spring M'n " "	5 50	H. Heils, E. S'klin, Lorb	5 50 ....
Sugar Creek " "	5 50	New England Red Ash	5 25 ....
Ashburton " "	5 50	Wyoming	5 50 ....

Dealers in these Coals may be found in our advertising columns.

At Philadelphia, May 8 1868.

Lehigh Lump and St'mb't	5 00@....	Schuylkill Chestnut	2 50@2 60
" Broken and Egg	5 00	Locust Mount Lump and Steamboat	3 50 ....
" Stove	5 50	" Broken	3 50 3 65
" Chestnut	4 25	" Egg	3 90 4 10
Schuylkill R. A. Prepared	4 10 4 50	" Stove	4 00 4 25
" Chestnut	2 45 2 50	Lorberry Coal	4 50 ....
" W. A. Lump and Steamboat	3 00 3 25	Shamokin	....
" Broken	4 00	Franklin, (Lykens Valley)	5 00 ....
" Egg and Stove	3 35 3 50	Broad Top	4 60 ....
	4 10 4 50		

Scranton Coal at Elizabethport, May 8, 1868.

(Corrected weekly by D. L. & W. R. R. Co.)

Lump	$4 00@....	Egg	4 50 ....
Steamer	4 25	Stove	5 00 ....
Grate	4 25	Chestnut	4 25 ....

Prices for Pittston Coal at Newburgh, May 8, 1868.

(Corrected weekly by Penna. Coal Co.)

Lump, per ton of 2240 lbs	$4 10@....	Egg " " "	4 20 ....
Steamer, " " "	4 10	Stove " " "	4 55 ....
Grate " " "	4 20	Chestnut " " "	4 05 ....

70 cents additional to New York.

Lackawanna at Rondout, May 8, 1868.

Lump	$4 25@....	Egg	$4 35@....
Steamer	4 35@....	Stove	4 75 ....
Grate	4 35@....	Stove	4 25 ....

70 cents additional to New York.

Lehigh Coal at Elizabethport, May 8, 1868.

Lump	5 00@....	Chestnut	4 25 ....
Steamboat and Broken	4 75	Stove	5 00 ....
Egg	4 75		

At Baltimore, May 8 1868.

Wilkesbarre & Pittston W. A. by car	$5 25@5 50	From wharf or yard, 50c. to 75c per ton additional	
Lykens Valley R. A. by car	@ 5 55	Retail, del'd, per 2,240 lbs	7 00@7 50
Sunbury & Shamokin R. or W. A. by car	5 00 5 50	George's C'k and Cumberland f. o. b. at Locust P't for shipping	@4 75

At Havre de Grace, Md.

Wilkesbarre or Pittston, W. A., on board	$@5 50	Sunbury or Shamokin, R. or W. A., on board	@5 50
Trevorton R. A., on board	5 50	Lykens V'y, R. A. on b'd.	@5 75

At Georgetown, D. C. and Alexandria, Va.

George's Creek and Cumberland f. o. b. $....@ 4 35

Prices of Gas Coals.

May 8, 1868.

PROVINCIAL.	Coarse. Gold.	Slack. Gold.	AMERICAN	Coarse. Currency.	Slack. Currency.
Block House	$1 75	$ 75	Westmoreland Co.	$8 25	$8 00
Gowrie	1 75	75	Despard	8 25	8 00
Lingan	1 75	75	Cameron	8 25	8 00
Sydney	2 13¾	71¼	Penn	8 50	8 00
Pictou	2 13¾	1 18¾	Newburgh Orrel Gas	8 50	8 00
Little Glace Bay	1 75	1 00	Delivered in New York.		
International Co.'s	1 75	....			

Prices of Foreign Coals.

Duty $1.25 per ton.

Corrected weekly by FARMELEE BROS., 32 Pine Street, N. Y.

Liverpool Gas Caking	$ 9 50	Liverpool House Cannel	18 00@19 00
" " Cannel	14 00	" " Orrel	16 00@18 00

Per ton 2240 lbs., Ex. ship.

PRICES FROM YARD

Liverpool House Orrel, scr'd	$18@20	Livp'l House Can'l, scr'd	22 00@— —

per ton 2000 lbs. delivered.

Coal Freights.

(Corrected Weekly.)

Rates of Freight from Newburgh

RIVER.

On "Pittston" Coal, by boats and barges of the Pennsylvania Coal Company, per ton of 2,240 lbs.

Troy and West Troy	$ 55
Albany and Greenbush	50
Coeymans	45
Coxsackie and Stuyvesant	40
Hudson & Catskill	35
Sangerties and Barrytown	35
Rhinebeck and Rondout	30
Po'keepsie and New Paltz Land.	25
Fishkill Landing	20
Cold Spring and West Point	30
Peekskill	40
Haverstraw	45
Sing Sing and Nyack	50
Tarrytown and Piermont	50
Yonkers	55

The Coal must be discharged with all reasonable dispatch, at the expense of the consignee, who shall also pay wharfage on the boat. Boatmen will tend guy while unloading.

EASTERN.

Stamford	$1 25
Norwalk	1 25
Bridgeport	1 25
New Haven	1 40
New London	1 50
Norwich	1 45
Mystic	1 45
Stonington	1 45
Sag Harbor	1 45
Bristol	1 55
Newport	1 55
Fall River	1 55
Providence	1 60
Dighton	1 60
Warren	1 60
Pawtucket	1 75
New Bedford	1 90
Boston	1 90
East Cambridge	2 10
Salem	1 90
Newburyport	2 00
Portsmouth	1 95
Portland	1 75

Freights on Coal Sea-borne from Port Richmond, Philadelphia.

April 30, 1868.—From Philadelphia & Reading Railroad Wharves, Phila., to

Boston	2 25	2 30	New York	1 30	1 40
Salem	2 25	2 30	Newburyport	2 40	— —
Providence	2 00	— —	Derby	2 25	— —
New Haven	— —	1 90	Albany	1 50	— —
Roxbury	2 50	— —	Brooklyn	1 35	— —
Chelsea	2 40	— —	Staten Island	1 40	— —
Cambridgeport	2 00	2 50	Williamsburg	1 35	— —
Bath	2 50	— —	Hackensack	1 60	— —
Charlestown	2 30	2 35	Hoboken	1 40	— —
Hingham	2 25	— —			

From Elizabethport and Port Johnston.

Albany	$1 00@	— —	New London	1 20	— —
Boston	1 75	— —	Newport	1 40	— —
Bridgeport	1 00	— —	New York	60	— —
Fall River	1 50	— —	Norwalk	1 18	— —
Hartford	1 50	— —	Norwich	1 25	— —
Hudson	1 00	— —	Pawtucket and towing	1 60	— —
Lynn	—	— —	Portland	1 75	— —
Middletown	1 25	— —	Portsmouth	1 75	— —
New Bedford	1 50	— —	Providence	1 40	— —
Newburyport	2 10	— —	Salem	1 75	— —
New Haven	1 00	— —	Taunton	2 00	— —

Rates of Transportation to Tide Water.

[BY RAILROAD.]

The following are the drawbacks allowed on all coal shipped East of New Brunswick and South of Cape Henry, until further notice:

	Drawback.	Freight.	Nett.
Lump	$1 25	$2 00	$ 75
Steamboat	1 15	2 00	85
Broken	1 00	2 00	1 00
Egg	65	2 00	1 35
Stove	50	2 00	1 50
Chestnut	75	2 00	1 25

From Port Carbon, 8 cents per ton more.

To Elizabethport.

L. V. Railroad from Mauch Chunk to Easton	$ 69
C. R. R., N. J., Easton to Elizabethport	1 06
	1 75
Shipping Expenses at Elizabethport	25
Total	2 00

To Port Johnson.

L. V. R R	$ 69
C. R. R. of N. J.	1 12
Shipping Expenses	25
Total	2 06

To Hoboken.

L. V. R.R.	69
Morris & Essex R.R.	1 12
Shipping Expenses	25
Total	2 06

[BY CANAL.]

To Port Richmond.

From Schuylkill Haven to Port Richmond	$1 00
Freights and tolls by Raritan Canal	1 90
	2 90
Drawback	30
Total	2 60

To New York.

From Mauch Chunk to New Brunswick, by Lehigh, Del. Div. and Del. & Raritan Canal	$ 90
Freights through	1 25
Towage	20

To New York via Morris Canal.

Lehigh Canal	$ 34
Morris "	40
Towage	10
Freight	1 55
Total	2 39

Expenses from Mauch Chunk to Jersey City for Re-shipment.

Lehigh tolls (net)	$ 34
Morris "	34
Freight	1 50
Re-shipping	30
Total	2 48

Provincial Freights.

	Currency.
Sydney to N. Y.	....
Lingan	....
Cow Bay	....
Big Glace Bay	....
Little "	3 00

Foreign Freights.

New Castle and Ports on Tyne	£13@15 keel.
Liverpool	12s. 6d.@15s. ton.

San Francisco Coal Trade.

[From the *Commercial Herald* April 14, 1868.]

SAN FRANCISCO, April 14, 1868.

Anthracite, tons	14,172	Coos Bay, tons	1,604
Australian, tons	1,579	English, tons	4 918
Bellingham Bay, tons	4,950	Lehigh, tons	541
Cumberland, cks	1,259	Mt. Diablo, tons	25,209
Chili, tons	700	Nanaimo, tons	6,902

The cargo of 1,500 tons Cumberland and Lehigh per Autocrat from Baltimore was wrecked after entering the Golden Gate. We remark a good demand for Anthracite, Cumberland, etc., but of which the present supply on sale is limited. We quote a sale of 130 tons hard, ex Samuel G. Glover, at or about $15; Cumberland in casks is saleable at $22@22 50 per ton.

New York Imports of Metals, &c.

The following will show the imports of Metals, &c., at the port of New York from foreign ports, for the week ending May 1, 1868. The quantity is given in packages, unless otherwise specified.

Metals, &c.	Quantity.	Value.	Metals, &c.	Quantity.	Value.
Brass Goods	4	437	Lead, Pigs	9,539	52,034
Bronzes	5	781	Metal Goods	74	11,035
Chains and An	64	2,025	Nails	2	182
Copper	....	116	Needles	9	4,802
Cutlery	34	14,382	Old Metal	....	2,360
Guns	1	196	Platina	1	2,420
Hardware	53	9,520	Percussion Caps	4	1,237
Iron, Pig, tons	400	5,814	Saddlery	8	1,285
Iron, Railroad bars	2,395	13,116	Steel	2,744	48,084
Iron, Sheet	10	934	Tin, boxes	6,323	196,893
Iron, other, tons	936	23,294	Tin, slabs, 2,505	590,960	99,273
			Wire	94	2,060

Metal Circular.

NEW YORK, May 4, 1868.

Since my last circular of the 6th ult., business, generally speaking, has been dull owing to the continued uncertainty in regard to our political and financial affairs. Money is easy at 7 per cent.

Gold advanced from 137¼ per cent. on the 7th of April to 140¾ per cent. on the 23d, and declined again to 138¾ per cent. To-day it is quoted 139¼ per cent. Exchange on London 110 per cent.

TIN.—In consequence of the advance in London, considerable transactions took place in the first half of April at an advance of 1 cent. The sales were from 12 to 15,000 slabs Straits, part to arrive, at 23 to 24 cents. Since then the market has been quiet but firm at 23¼ to 24c. Banca is quoted 27½c. English, 24½, all gold.

The importations for April amounted to 1,600 slabs Banca and Billiton, 18,000 slabs Straits, and 21 tons English. From the Straits 15,000 slabs are on the way.

The stock is estimated at.....28,000 slabs Straits,
1,600 " Banca and Billiton,
And 25 tons English, equal to... 750 "

Total in Boston and New York, 30,350 slabs,
Against..... 21,400 " on the 1st of May, 1867,
36,000 " " " " 1866.
9,000 " " " " 1865.
22,300 " " " " 1864.

The London market is quiet at the advance established in the beginning of April, 94s. stg. for Straits.

SPELTER is quoted at 6½c., gold, for Silesian. The importations for April were 100 tons, and the stock 300 tons, against 700 tons on the 1st of May, 1867, and 1,000, 1st of May, 1866.

COPPER has been in good demand and the sales in April amounted to four millions lbs., partly for export and on speculation. The price has advanced from 23c. to 24c. for Detroit, and from 23¾c. to 23¾c. for Baltimore. The above sales include part of the expected arrivals from Lake Superior. The bulk of them has now been disposed of by the companies, but a good deal is likely to be again in the market.

There is a great discrepancy in the accounts from Lake Superior, regarding the probable supply of this year. The new mines are not likely to yield as much as expected.

700 tons, mostly Detroit, have been shipped to Europe, including the last remnant of 36 tons Minnesota. The price paid for this parcel was 18½c. gold, and at this figure the company has sold 50 tons to arrive. If the manufacturing business remains as dull as it has been of late, we shall ship more copper this year than for 6 or 7 years past.

The rising tendency of the European markets seems to gain strength. The London quotations of the end of April, were £71 10s. for Chili, and £86 for best selected. The shipments from Chili to Europe show a falling off against the two last years.

LEAD is unchanged 6¾c. for ordinary foreign. The importations for April, were 1,700 tons, and the deliveries for consumption, 2,200 tons.

The stock is 4,100 tons against 2,800 tons on the 1st of May, 1868.
6,000 " " " 1866.
5,800 " " " 1865,

RUDOLPH C. WINTERHOFF, 64 Beaver street.

SAN FRANCISCO STOCK MARKET.

A telegram from San Francisco, dated May 4, to Messrs. LEES & WALLER, Bankers, 33 Pine street, this city, quotes stocks as follows:

STOCKS.	Bid per P't.	STOCKS.	Bid per P't.
Gould & Curry	.. @ ..	Belcher	335 @ 340
Savage (per share)	156 @ 157	Uncle Sam	247 @ ..
Chollar Potosi	248 @ 247	California	86 @ ..
Ophir	187 @ 185	Imperial (per share)	.. @ ..
Hale & Norcross	2,000 @ ..	Alpha	.. @ ..
Crown Point	2,340 @2,330	Kentuck (per share)	462 @ 465
Yellow Jacket	1,420 @1,440	Cal. Steam Nav'n Co.	70 nominal.

AMERICAN
Journal of Mining.

WESTERN & COMPANY, PROPRIETORS.

ROSSITER W. RAYMOND, EDITOR.

OFFICE, 37 PARK ROW, NEW YORK.

By publishing contributions, the JOURNAL OF MINING does not necessarily endorse the positions assumed by contributors.

Published Every Saturday Morning.

TERMS.—SUBSCRIPTION, $4 00 per annum, in advance; $2 25 for six months Single copies Ten Cents. ADVERTISING: Twenty-five cents per line of thirteen words for each insertion inside, and forty cents outside. Terms invariably cash in advance.

DESIGNING, LITHOGRAPHING, WOOD ENGRAVING, and JOB PRINTING Executed in elegant style, on reasonable terms.

NEW YORK, SATURDAY, MAY 9.

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Subscribers receiving their paper in a *blue* wrapper will accept the same as a notification that their subscriptions have expired, and that the JOURNAL will be discontinued unless we are otherwise authorized.

THE CALIFORNIA SURVEY.

After the two articles in which we have expressed our opinions concerning the recent legislative abolition of the geological survey of the State of California, we think our position in regard to that subject cannot be mistaken by any reader. We hold the act of the legislature to have been in a high degree unwise and discreditable, and condemned by considerations of immediate as well as far-reaching policy. Perhaps this very decided judgment may prevent us from being misunderstood, if we suggest that the manner in which the distinguished chief of the survey conducted its operations is open to some criticism. We are aware that it is very easy to find fault afterwards, and that it can do little good in this particular case; and, moreover, our admiration and sympathy for Prof. WHITNEY are so great, that we venture with reluctance to question in any respect his work or his method; but the point to which we shall call attention bears a general application, and perhaps a useful lesson, for all undertakings of a scientific character, fostered by government for the sake of the people.

The only serious objection urged by the opponents of the survey in California was that its results were not adequate to the money and time expended upon it, and that they were not brought before the public in practical and useful form, during the continuance of the work. No one denies the value and admirable execution of the publications already made; but the mining communities claim that, up to this present time, little or nothing has been accomplished for them. They are struggling with many difficulties, and earnestly seeking information concerning many doubtful, yet vitally important questions; and they look on with unconcealed impatience, while a body of distinguished professional men, competent to give direct and immediate assistance, busies itself almost exclusively with laying a broad and thorough scientific basis for a magnificent examination of the State, and tells them to wait a few years, until those matters which concern their daily industry are duly reached in the execution of this vast plan. They ask for a roof over their heads, and are pointed to the slowly rising foundations of a mighty edifice.

The reply to this objection is, that the original establishment of the Survey commanded its chief "to make an accurate and complete geological survey of the State, and to furnish, in his Report of the same, proper maps and diagrams thereof, with a full and scientific description of its rocks, fossils, soils and minerals, and of its botanical and zoological productions, together with specimens of the same, which specimens shall be properly labelled and arranged and deposited in such place as shall be hereafter provided for that purpose by the legislature." A plan so comprehensive must be systematically carried out, and "with such an end in view"—to quote the words of an esteemed correspondent in San Francisco, "Prof. WHITNEY could not spend the time and money of the survey in publishing flaming reports of immense mineral resources, vast gold deposits, petroleum clap-trap, or yellow-covered geological literature generally."

The thorough and systematic style in which the work was begun, and the great value of its results, when they should be completed and published, are, in our opinion, and that of all competent judges with whom we have conversed, unquestionable. But was there no way of serving the public immediately, as well as remotely; of giving valuable economic advice and information, without any detriment to the elaborate scientific work of the survey? The Indian who has planted a field with corn, the benefit of which he expects to enjoy in harvest-time and winter, does not hesitate, when he is hungry, to eat a little of his corn *green*. The people of California were hungry indeed, not for flaming praise of their resources, but for substantial and nourishing food of information; and, it must be confessed, the crop was long a-growing.

The splendid reports of the State of New York have been referred to, as a model which the California corps intended to equal, or surpass. But, if we remember rightly, the whole progress of the New York surveys was attended with the periodical publication of volumes on economical subjects, furnishing the public in advance with most important results. The purpose of such publications was temporary, if you please; and they are perhaps superseded by the final Reports; but they accomplished at least one thing: they kept the people alive to the benefits of the work in progress; and the grand result was the continuance of public support. The New York Survey was carried out; the California Survey is cut short.

Scientific men must remember that they have to deal with the prejudices and ignorance not only, but also the legitimate demands and immediate necessities, of the people. Where personal honor and ambition alone are at stake, it may be well enough to play the CORIOLANUS; but in this case, we feel sure that the victim loses personally very little, in comparison with the loss of the State; and probably his own chief regret is his failure to accomplish a great public service. Would not a little more tact, with not a whit less integrity and ability, have averted the deplorable catastrophe?

SCIENCE—EXTRA SUPERFINE.

The *Stockholder* of the 5th instant devotes several columns to an account of recent experiments on Georgia gold ores, made at East Boston, by Col. C. C. STEVENS, with his new flux-material. The editorial remarks which preface the long quotation from a Boston paper are both historical, philosophical and scientific, ranging over the alchemists, paper money, JOHN LAW, and metallurgy. From this wealth of wisdom we select one gem:

"Sulphur, with salt, seems to be the accompaniment and mixer of all ores—indispensable, as nature goes, to their constitution, but difficult and expensive to be got rid of by art when the metals are sought to be extracted from the ores."

"Sulphur with salt" is good—so good that we have scarcely any inclination to proceed to consider the description of the trial itself, which, though highly wrought, is far below the level of this brilliant introduction. Of course there was a great deal of gold taken out of a very little ore, much more gold than a mint assay would show. A good deal of excitement was caused by the discovery of four different nuggets of gold in "the various depressions at the bottom of the furnace." Two were found while the party of visitors were present, and two more after they had separated. In the words of the Boston *Post:*

"It was evident to every gentleman present who had the slightest knowledge of the smelting of metals, that the Stevens Flux had accomplished what no other assay process had been able to do. It had destroyed the sulphur, thrust out of the walls of the ore the miners great curse, the silica; and after accomplishing all this it had converted these and other ingredients into an article of commerce that would readily sell for a sum nearly, if not quite, sufficient to defray the smelting expenses—the slag which is left after the gold is obtained being worth from forty to fifty dollars per ton for the manufacture of tiles and heavy glass bottles. In fact it is already in demand for this purpose."

If all this was evident to every gentleman who had the "slightest" knowledge of metallurgy, how would it appear to those with more than slight knowledge? Such men will see at once that a trial of this kind settles nothing but the fact that the Stevens Flux is a flux—which any chemist could have told before. We need not repeat that in stories of the production of gold where it cannot be found by "mint assay," we have no faith whatever.

We have often had occasion to lament the inaccurate and untrustworthy reports of experiments which are given in the papers. The present is no exception. It is a farrago of nonsense, relieved by attempts at poetry which are funnier but not more silly than the prosaic statements of "fact." We are told that the "destruction" (!) of silica is "driving from the rocky hive the queen-bee of all impurities in ores," and if this can be accomplished, "then all the other impurities will surely leave, and the gold is ours." Moreover, "by none of the old methods, the two principals of which are amalgamation and chlorination, have the ores been desulphurized or the silica destroyed."

"Sulphur, with salt," the great "mixer of all ores;" silica, the "great queen-bee;" fifty-dollar slags; long processions of nuggets—all this splendor will be likely to lead some capitalist to extravagant expectations, and possible disappointment. There are "depressions," where consoling nuggets cannot be found.

In a former article on this flux, we explained its nature and real merits. We regret that it is to be made the object of speculation, and puffed into a transient, exaggerated reputation. And Mr. HAYES, of Boston, must regret that his brief report on the subject is paraded as an "official paper of the State Assayer of Massachusetts." Many years ago, when the late Prof. HITCHCOCK was engaged in the geological survey of that State, Messrs. HAYES and JACKSON were employed in certain chemical work connected with his reports; and both these gentlemen have been saddled ever since (no doubt to their great annoyance) with a title which has no legal existence. If Mr. HAYES were really a State Assayer, and his report on the Stevens Flux really an official paper, it would have contained a more full and thorough statement of the case than it does.

A PACT FOR COAL MINERS.

Owing to the great depth, at which the greater part of the coal mines of England are worked at the present day, it becomes a matter of necessity to employ in them every available means to secure healthful currents of air along their lower levels. However much scientific investigations may have done in the way of bringing into existence an economical and effectual means of ventilation, an application of which, in any case, may furnish, in underground workings, currents of air in quality and quantity proportionate to the necessity of the occasion, this deplorable fact remains as yet too well known; that the "unforeseen danger" still lurks along the path of the miner. The terrible explosions, of which every now and then we get reports, tell us that science has not yet completed the task it has to perform. But, though it be impossible for the English engineer, under all circumstances, to prevent the explosion of the fire-damp that gathers in his mine, is there no way of rendering the destruction of human life less great, when such explosions do occur? If, in the present state of the theory and practice of ventilation, the great evil cannot always be prevented, every means that can be used, in order to counteract its terrible effects, are certainly of the greatest moment. PROF. PHILLIPS, in his "Report on Colliery Explosions," answers our interrogation when he says:

"Abundant currents of air may be so misdirected as to yield bad ventilation; the safety-lamp may be so unwisely handled as to endanger the lives it should protect; the best regulations may, if not strictly carried out, become sources of mischief. The general remedies for these errors, or crimes, are instruction and responsibility; increased knowledge and, stronger motives to use it rightly—knowledge is nowhere more powerful, obedience nowhere more necessary, than in a coal mine.

"Until the young miners are instructed in the necessity of observing, with all strictness, the rules which superior knowledge has proved to be essential to their safety, we cannot hope to prevent those calamities, which we so much bewail.

"A larger number of miners perish from the effects of the 'after-damp,' or 'choke-damp'—carbonic acid—than from the actual explosion of fire-damp. When the mixture of carburetted hydrogen and air is exploded, the carbon combines with oxygen to form carbonic acid, and the levels become filled with this deadly vapor. Carbonic acid kills by asphyxia; the action of the heart ceasing with the inhalation of irrespirable gases. Now, could those who were rendered insensible by the after-damp be speedily removed to pure air, they might be, by a little careful attention, restored to animation. It, therefore, becomes of the first importance to have at hand the means which would enable men to penetrate the dangerous gases and rescue their comrades. The best simple method is to place in a coarse bag a mixture of powdered glauber salts—the sulphate of soda—and lime. This tied over the nose and mouth, effectually absorbs the carbonic acid, and prevents its exercising any injurious effect on respiration."

At this comparatively early day in the working of our coal mines—at a time when, in most cases, their depth is not so great as to require every scientific means justifiable, in order to secure a proper ventilation—we do not find ourselves entirely relieved from the terrible calamities that result from the explosions of fire-damp. The "danger unforeseen" lurks along the path of our miners, as well as along that of the English worker in veins of coal. If then, through want of knowledge, or of proper care, we must, now and then, endure the calamity of an explosion, most assuredly every means that can be employed to palliate, and ward off its usually disastrous results, should be made use of. Our extract from the pen of PROF. PHILLIPS, a trust-worthy source, tells us of a simple method, in case of such disasters in our mines, of saving human life. The remedy, which lies within the reach of all, should be at the proper moment in the minds of all who have anything to do in the dangerous work of mining coal. It is not for the engineer alone to treasure up this important fact, but for the miner also. The time might occur when according as he was in possession, or ignorant of the above fact, the life or death of his comrade would lie in his hands.

MEASUREMENT OF AIR CURRENTS IN MINES.

As in the practical work of Hydraulic Engineering, it often becomes necessary for the Engineer to determine the mean velocity of a stream of water, so as to be able thereby to calculate the actual amount of water passing along the channel, so often in the working of mines it is very important to measure the velocity of air-currents in the galleries so as to have data for determining the actual amount of air passing along them. The Engineer determines the *maximum* velocity of a stream of water by simply observing the time required for some light body—as, for instance, a cork, to float along its surface through any given distance. From this data as a starting-point, he has no difficulty in calculating the whole number of cubic feet per minute that flows along the channel

Mr. Smyth, in one of his lectures at the Royal School of Mines, speaks of a method somewhat analogous, and quite as simple, of testing the quantity of air passing through a mine. He says that "persons thoroughly accustomed to deal with the circumstances which result from the falls of roof or other obstructions of the roadways, could tell by the flame of the candle whether there was sufficient air in any given place for the workmen; but for many reasons, it was often desirable to measure the actual quantity of air in the working portions of a mine. This was done frequently by firing a small quantity of powder, and observing how long the smoke would take to pass through a measured distance. That would give the velocity per minute, which, multiplied by the proper multiple, would give the total amount of cubic feet per minute."

There have been, of course, a great number of wind measurers invented for determining the velocity of air-currents, which are used with greater or less degrees of success. But as every Engineer does not always have such an apparatus at hand, particularly in this country, the simple method above noted of attaining the desired result, might often prove of great value. Such a simple adaptation of means to an end, should not be lost sight of.

REMARKABLE PROPERTIES OF METALS.

We publish to-day an original paper from the pen of Dr. Van der Weyde, which possesses, in its way, a remarkable degree of interest. To those of our scientific readers who are fond of looking into, and keeping pace with the investigations and discoveries of Science, Dr. Van der Weyde's paper cannot be other than exceedingly interesting. Among other things the article tells us of a remarkable relation that seems to exist between the *magnetism* of some of the metals, and of their *atomic* and *specific* weights, or rather, that really does exist between them; a fact that is clearly and convincingly set forth in the inferences drawn from the column of quotients given. The conclusion drawn from these investigations, in regard to the probability of finding magnetic qualities, under certain conditions, in metals that have hitherto been thought non-magnetic, conforms strictly with the experiments of Faraday. But we refer our readers to the article, as one that is well worthy a careful perusal, on account of its scientific bearing, even if at the present time it should have no practical value.

Low Grade Ores.

In one of our Editorial articles of last week, we incidentally made a remark in regard to the very small percentage of gold that was obtained from the sulphurets of the Lower Hartz mining district.

In order to prevent any misunderstanding in regard to the matter, we would remark that the ore is not worked for gold alone. On the contrary, silver, copper, sulphuric acid, and sulphate of zinc are the principal products that result from the working of these ores.

Gold is an incidental product. In the series of metallurgical processes that are employed in the treatment of the ore for copper and silver, the gold is gradually concentrated, and in the end obtained, by means of a very complete method of separating it from the silver through the agency of sulphuric acid.

NEW PUBLICATIONS.

A pamphlet is at hand, entitled "*Sterility is Laid.*" It contains an address delivered before the Farmers' Club of Bedford, N. H., by John A. Riddle, Esq.

Mr. Riddle states very succinctly the first steps in Prof. Ville's new system of Agriculture; and then goes on to show how the farmer may make an application of the principles discovered by the French scientist in the practical working of his farm. The results of analyses of various kinds of composts and of different kinds of crops are given. This is, indeed, of the greatest importance. Vegetation, in order to thrive, must of course have its proper food, and in proper quantity—the supply must equal the demand.

We have been courteously favored with a report of the President and Directors of the Morris Canal & Banking Co., to the Stockholders, for the fiscal year ending February 29, 1868. It appears that the season of navigation was about two week's less than the average of former seasons. After paying the usual semi-annual dividends and various dues, there remained to the credit of profit and loss account about $61,000. The cost of carrying coal to tide-water was reduced to very low rates, on account of great competition among the carrying lines. There has been a falling off from the previous year, in the amount of coal and ore received by the Canal from the mining regions. It is contemplated to increase the carrying capacity of the boats about fifteen per cent., by lengthening the locks and increasing the depth of the water. They hope to be able, by such means, to compete with railroads, and other canals engaged in the Anthracite coal trade.

We have received a new map of California and Nevada, compiled from the latest surveys and explorations. It shows the mining districts of the States, the route of the Central Pacific Railroad, and gives other valuable information. This map is the most complete of its kind that we know of. Price, mounted, $2,50; in pocket form, $1,50. Frey & Nell, Publishers, 79 Nassau street, New York.

Notes on the Geology of *the Survey for the Extension of the Union Pacific Railway, E. D., from the Smoky Hill River, Kansas, to the Rio Grande.* By John L. Leconte, M. D. Philadelphia. 1868.

This interesting pamphlet, giving the results of observations made in the summer and autumn of 1867, contains, besides much information of general importance, a brief, courteous, but positive dissent from the opinion held by Dr. Hayden, that all the useful beds of lignite west of the Mississippi are of tertiary age. The eminence of both authorities, will excuse us from taking sides in the case at this stage of the discussion. Our own opinion, like that of the scientific world, is gradually forming. Meanwhile, we should be glad to hear from Dr. Hayden his views upon the objections of Dr. Leconte; and we suppose that the forthcoming geological report of Nebraska, if not some earlier publication, will contain further argument from him, in support of the thesis he has set up.

The Journal of the Franklin Institute, Philadelphia, for the month of April, is at hand. It contains a large number of meritorious and highly interesting articles upon various civil, mechanical, chemical, and educational subjects.

The article on "Wooden Pavements," which consists of the "reply and report of Chas. A. Haswell, to a communication from a number of the tax-payers of the city of New York," possesses a peculiar interest. The comparative merits of the Nicholson and William's pavements are very briefly, but clearly discussed, and the scale seems to turn in favor of the latter. The articles on "Carbonized Paper," "Qualitative Analysis by the Spectrum Microscope," and others, are very interesting in their way.

The May Number of the American Naturalist has been received. It contains a series of racy articles, among which, not the least interesting to the reader, is the one upon "The Lakes of Iowa—Past and Present," from the pen of C. A. White, M. D. From a geological point of view, he explodes the idea that has been popularly entertained that "the Walled Lakes" of Iowa are the work of a departed race of men.

The Butterfly-Hunters, by Helen S. Conant. Boston, Ticknor & Fields, 1868.

This charming little volume belongs to a class which we hope to see more numerously represented in our literature. So long as books for the young were mainly filled with morals or dialectics, or mere creations of fancy, however wholesome and proper all these may be, there is double danger that children who early acquire a taste for reading will lose their taste for the world of things, and, to some extent, the use of their perceptive faculties. But books which directly stimulate an interest in nature, and throw the child back, as it were, on the world of notable phenomena, are so many safeguards against the evils of over-studious youth. It is not *all* books, but *bookish* books, that tend to an unequal and unhealthy mental development. We believe in Robinson Crusoe, and Masterman Ready, and the Swiss Family Robinson, and the books of Mayne Reid, and others like him; though many of these works are too sensational, and deal with objects too remote, to be of real benefit to children. Many a boy dreams of fighting lions and tigers, or tracking the red men through the pathless forest, or harpooning the whale in polar seas, but lets the wonders of Nature all around him go unnoticed, because no one has made them the subject of a pleasant tale. Why will not some one write of squirrels, woodchucks, rats and mice, hens and chickens, cats and dogs, with such knowledge and humor and fancy as to invest them with interest? *The Butterfly-Hunters* is a book for children of just such a character. The story is a pretty, shining thread, on which the butterflies are strung. The illustrations are delicate and life-like, and the typography is worthy of the dainty theme. The species described are those which are common to New England and this State at least; and we have no doubt that, with this book in hand, many country boys and girls—or city boys and girls, spending their summer in the country—will find much pleasure, this season, in verifying by actual observation its pleasant descriptions.

ADDRESS OF ROSSITER W. RAYMOND ON THE NATIONAL SCHOOL OF MINES.

At a recent meeting of the Polytechnic branch of the American Institute, after the usual scientific exercises, Mr. Rossiter W. Raymond, Editor of the American Journal of Mining and U. S. Commissioner of Mining Statistics, addressed the Institute on the subject of mining industry, especially with reference to the necessity of a National School of Mines. The speaker's views were substantially those which have been presented from time to time in our editorial columns. He considered first, the nature of mining industry, and its relations to civilization, and pointed out the distinction between mining and agriculture, in that the former was characterized mainly by greater permanence of *product*, but less permanence of *production*, while the latter was a constant stream of perishable wealth from an inexhaustible source. Soils, even forests, may be recuperated and restored after the most wasteful treatment; but mineral deposits, once exhausted by legitimate labor, or ruined by wanton extravagance or ignorance, are lost. This distinction bears directly on the history of nations. The approaching exhaustion of many local sources of mineral wealth, in England and on the continent, was adduced in illustration. Regarding themselves as guardians of the treasures of the soil, and mindful of the fact that the consumption of such wealth is a constant drain upon capital as well as income, most Governments have claimed over mineral deposits, especially those of the precious metals, a right of control. They have raised from them revenue for the State, and prevented their injury and destruction by private citizens, recklessly hasty to be rich. Our American democracy does not favor governmental interferences of any kind, and although in obedience to the traditions of statesmanship our government has hitherto maintained in theory its supreme right over the minerals in its territory, the claim has never been enforced in practice. Nor is it necessary to imitate the despotisms of Europe. Gold and silver mining were then discussed, and declared to be not theoretically but practically and economically (owing to peculiar circumstances) the most difficult branch of the art in this country. The special relations of bullion to money, commerce and government, and to all forms of industry, were explained, and the speaker showed by a forcible argument, which won repeated interruptions of applause, that the mining industry of the far west has been the motive power of a vast national progress, and that, even if every dollar of gold and silver produced had been obtained at undue expense, the great balance of national advantage would be in favor of the pioneer industry which has laid open half the continent, and established the already vast agriculture of California and the rising commerce of the Pacific.

This interest has therefore peculiar claims upon the protection of Government. Now what shall be the nature of that protection? The production of bullion is decreasing. What can be done to raise it again? What are the crying necessities of the mining community? The speaker claimed that two main points covered the case. Secure titles and the diffusion of proper information would increase the profits and reduce the wastes of mining in this country. He then discussed the means to be employed in attaining these ends, and in relation to the second one, remarked that a National School of Mines is a great necessity, and gave his reason why the proposed institution should be a school and not a bureau; a school of mines and not of general science, with mining as a subordinate branch, and a national, not a State or private school. In the course of these remarks, Mr. Raymond spoke in highly complimentary terms of the Mining School of Columbia College, but said one might as well refer a citizen of California or Idaho to Berlin as New York for his education; and, moreover, that to realize the utmost possible benefit from its influence, a mining school should be located in a mining community. Considering the objections frequently urged against science and theorists by so-called practical men, he showed that the establishment of a National School, in this country would obviate the evil, the existence of which he frankly admitted, and the nature of which he believed to lie in training men to a particular profession thousands of miles from the place in which they were to practice it, and under widely different conditions. Mr. Raymond spoke for about an hour and a half, and was listened to with the closest attention by a crowded and highly interested audience.

Original Papers.

[WRITTEN FOR THE AMERICAN JOURNAL OF MINING.]

REMARKABLE RELATION BETWEEN THE MAGNETISM OF SOME METALS, And their Atomic and Specific Weights

BY P. H. VAN DER WEYDE, M. D.

When we divide the specific gravity of the different metals respectively into their atomic weights, we obtain quotients which indicate, not directly, but relatively, the distance of their atoms; (upon the supposition that the atomic weights indicate really the relative weights of their atoms, which is only probable, but not proved): comparing those quotients in the subjoined table, we find the following remarkable results:

	Spec. Grav.	*Atom. W't.*	*Quotient*	
Cobalt,	8 5	30.	3.53	remains paramagnetic at white heat.
Iron,	7.8	28.	3.59	is only magnetic below bright red do.
Chromium,	6.8	26.	3.82	" " " dark "
Nickel,	8.	31.	3 90	" " " 600° Fah.
Manganese,	7.	27.6	3.94	" " " 4° Fah.
Palladium,	11.8	53.	4.49	
Platinum,	21.5	99.	4.57	
Zinc,	6.8	32.5	4.78	
Aluminium,	2.56	13.7	5.35	
Iridium,	16.	99.	6.2	
Cadmium,	8.7	56.	6.4	
Magnesium,	1.74	12.	7.	
Mercury,	13.5	100.	7.47	
Lead,	11.4	104.	9.12	
Osmium,	10.	100.	10.60	
Gold,	19.4	196.	10.035	
Silver,	10.47	108.	10.3	
Lithium,	0.593	6.4	10.9	
Antimony	6.7	130.	19.4	
Bismuth,	9.8	208.	21.22	

OBSERVATIONS.

1st. The five magnetic metals have all quotients below 4.

2nd. The so-called non-magnetic metals have all quotients above 4.

There is, however, one exception to this rule, in the case of copper, of which the respective specific and atomic weights are 8.8 and 31.7, of which the quotient is 3.602; but then it is probable that the atomic weight of copper needs correction, and should be doubled to 63.4, in which case the quotient would be 7.204, and it would then fall among the other non-magnetic metals.

3d. The quotients are the smallest for those metals which are the most permanently magnetic, even at high temperature, and *vice versa*.

4th. As cooling increases by contraction the number expressing the specific gravity, it will consequently decrease the quotient obtained by using this increased specific gravity as a divisor, in perfect accordance with the fact that cooling increases the paramagnetic property.

5th. As, inversely, heating decreases by expansion the specific gravity, it will increase this quotient, in accordance with the fact that heat diminishes paramagnetism, and finally destroys it in all metals with the single exception of cobalt, which has the smallest quotient of all, and consequently can stand some increase.

6th. The experiments of Faraday on diamagnetism and paramagnetism, with very powerful electro-magnets, have proved that palladium and platinum are the strongest paramagnetic next to the first five in the above list; they have in my list, also, the smallest quotients connected with them.

7th. In the same way as diamagnetism is the opposite of paramagnetism, the larger quotients in the above table belong to diamagnetic bodies, as, for instance, mercury, antimony and bismuth. The last is the strongest diamagnetic substance experimented upon, and possesses the greatest quotient in the above table.

8th. If we were able to cool the other metals so as to increase their specific gravities to such a degree as to have a decided effect on the amount of this quotient, we might perhaps succeed in discovering in several of them, paramagnetic qualities, by means of Faraday's apparatus.

9th. Heating decreases the paramagnetic qualities, with the specific weight, and consequently increases the quotient. That it may do this to such a degree as to make the body diamagnetic, is proved in the case of oxygen gas, which, when cool is paramagnetic like iron, and when hot, diamagnetic like bismuth.

10th. That this relative distance of the atoms (upon which, of course, the specific gravity of bodies depends) is closely related to their magnetism, is again proved by their crystals, which are always less dense in the direction of their optical axis, and expand by heat more in one direction than in another, and by Pluecker who has demonstrated that they are diamag-

netic in the direction of their optical axis, or of the longest axis of crystallization. In some of these crystals, this action is so strong that they are influenced by the magnetism of the earth; as, for instance, a properly cut crystal of kyanite (a dense silicate of aluminia) when suspended on an axis, will behave like a compass needle, and may be used as such, a fact little known, but worth knowing.

Correspondence.

[To insure insertion of Correspondence in our columns the full name and address of the writer must be given.]

The Venezuela Gold Fields.

Guacipati, Jan., 1868.

Editor American Journal of Mining:

While you are enjoying holidays, amid the sleets and thaws and snows of January in New York, your southern correspondent revels in the pleasures of an eternal spring. Fresh flowers bloom every day—fresh grass grows from each monthly burning. The temperature never rises above 84° Fahr., and rarely falls as low as 78°. The foliage and landscape of a well-developed spring are all around him.

Over the green savannas, south and south-west of this old Indian Mission village, let us look at the mountains enveloping the El Dorado of Guayana.

CHARACTER OF ROCKS.

The gneissoid rocks with large cerros of quartz, gradually slope to the flat lands of the Youmari river. The gneissoid rocks we have followed all the way from the northern rim of the Essequibo river basin, at San Maria. They are not primary, or "fundamental gneiss," but metamorphosed rocks, for they often contain fragments of other rock; their associated granites are but altered sandstones. Siliceous and talcose slates run parallel with the gneiss. Whatever they are with their porphyry itacolumnite and quartz, they terminate at the valley of the Youmari river. They have gradually fallen off by a succession of plateaus and slopes, from 1750 feet above the sea to 300 feet at the Youmari. North-eastward and south-westward the same sloping to the river is seen.

AURIFEROUS ROCKS.

Beyond the river lie the auriferous rocks proper. As has been already stated, the gneissoid rocks occasionally have gold, as far north as the Orinoco, but no "paying" belt has as yet been found. Immediately beyond the valley of the river rise the mountains which belong to, and enclose the gold-producing rocks.

The first mountain is called Iguana. It is composed of altered slates, sandstones, conglomerates and breccias. This range is about five miles long, N.E. and S.W., and in the latter direction apparently runs into another and similar range. Crossing this range and descending into the valley of the Macupio, we next see a nondescript rock peculiar to this basin, locally known as "blue-stone." It weathers roughly and is of a dull yellow ochre color, and makes a stiff yellow clay soil, very sticky in wet weather. It is extremely hard, tough, and difficult of fracture. Where quartz traverses this rock, it is considered a "good sign" by miners. Near the blue-stone is Colorado rock, or sandstone of rich red color. Talcose slate, siliceous slate and hornblende slate are the main rocks of the valley bearing gold quartz. All these rocks, with their belts of porphyry, run E. and W. Within them are the quartz veins, of various widths, from wide enough to make a village site, as Caratel (Nueva Providencia) to veins only a foot, or a few inches wide. These veins are readily referable, now that the clue has been found, to the main systems—the major, running with the valley, N.E. and S.W., and the minor, E. and W., and meeting with the former. Besides these, there are numerous inosculating veins running in various directions, and crossing each other and the main systems.

On the east of the valley we have a repetition of the same rocks as on the west.

The country rock is much decomposed, so much so as seldom to make visible its original condition. The Macupio and its tributaries have worn a valley out of these rocks, in its lower portion, of about one half mile wide, and deposited the debris of the gold veins in two positions—one, clay and fine gravel, "grada," on the decomposed country rock; the other, water-worn fragments of quartz mixed with similar ones of blue-stone. The "barrancas" of this country-placer of ours, are confined to these localities. Sometimes they produce large nuggets. Twenty pounds have often been found. The grada is seldom deeper than twenty feet. In other years, the Macupio has borne large quantities of the grada into the valley of the Youmari; and this stream has contributed largely from the breaking down of veins crossing its course; for on the north end of the valley, this river crosses at right angles and makes a horse-shoe bend around the mountains inclosing the El Dorado. Just below the debouchment of the Macupio is situated the ancient mission village of Tabuken. Here gold was first found in the gravel of the river. The wash of the Macupio can be seen making large bars and shoals in the river. The first effort of American capital was tried on these gravel beds—crushing the quartz "paving stones" of the river, by means of a feeble stamp mill of two mule power. It was unsuccessful. For many years gold was supposed to be confined to the river bed, and the first grant of auriferous concessions was made, including all the streams in the Indian country south, as far as the boundaries of Brazil.

CARATEL, CALLAO AND THEIR MINES.

Afterwards, gold was found in decomposed vein stuff at Caratel, later in hard vein higher up the valley, to be presently described, and still later at the village of Callao, near the river. This is a narrow vein running through talcose slate, and has been highly productive. Barrancas, of 27 square, have given 10, 17, and 21 lbs. of gold per day.

It is a curious sight to enter this village for the first time. In its palmy days, before the gold lay too deep for individual effort, it is said to have contained 2,000 inhabitants. To an American accustomed to the back-woods, it gives the appearance of a multitude of thatched shanties, dropped down confusedly—yea, decidedly "mixed," in a large chopping of the forest, the trees and brush but partially burnt. Around the charred logs, and stumps, and brush, and buildings, you wind your way as best you can. No street is straight, no two angles are alike, none of them are long. On every side you see half-filled old barrancas, or new ones. In your path is a pile of rubbish from some half-concealed old trap-like mill. Without a guide you flounder along, cautioned now and then to beware of the "carmina."

So rich were the diggings, so hurried the miners to secure their profits from early locations, that each one selected his spot, built his shanty, and commenced work, sometimes within it, always close by it, sinking his shaft, raising his quartz by windlass, and crushing it on a stone with a hand-hammer, reserving the samples showing gold for future pounding in a mortar, and washing and throwing away the others. So rich is the refuse, that everywhere are seen dilapidated men, women and boys gleaning from the waste heaps. We have analysed from these heaps as high as $1,400 per ton. A village without order, without streets, without an enclosed building—such is Callao.

MACUPIO VALLEY.

The auriferous valley of the Macupio is divisible into three portions, the lower one-third divided from the upper two-thirds by a cross range of mountains. The lower is divided into two basins by a high hill and range of porphyry and altered slates, Callao basin lying west, and Caratel basin east. The upper two-thirds rises rapidly into four high ridges, Chili, Potosi, Peru, and Panama, enumerating them from the east, westwards, all being connected together by a high crest which is the "*divide*" between the valleys of Macupio and Iguana. This crest is by estimation 600 or 700 feet above the valley. On these ridges and crest are numerous veins, worked and unworked—Chili, Peru, Potosi, Laguna, Lagunita and Panama being the most prominent; east and west veins are, in the upper valley, the most prominent. Veins here, are very bold, prominent, determined in their direction, and can be traced from the valley to the top of the hills holding them. At Panama and vicinity, there is strong evidence of an anticlinal, the veins dipping westwards, while at Chili they dip in the contrary direction.

This valley, averaging three-quarters of a mile wide, and four and a half miles long, is definitely known, in all its veins yet discovered, to be auriferous.

GOLD AT OTHER POINTS.

Beyond, in a south-west direction, gold bearing quartz has been traced three days' journey into the Indian country. Still farther it has been found on the Caroni, and beyond this river, on the Parágua, by members of this party. Eastwards it has been found as far as the sea coast in British Guayana, and southwards at the confluence of the Youmari, and Cuyuni, and at the village of Avechia. It seems a very limited area of auriferous rocks, to be definitely known, after fourteen years of exploration. But, it must be remembered that all of Guayana south of the Yournari river, and reaching from the British and French possessions across to New Granada, is Indian—wild, uncivilized, and Spanish-hating Indian. Besides, excess of enterprise is not a failing of the Venezuelians. Why should they go into unknown regions while the Macupio is still unexhausted?

RICHNESS OF THE VEINS.

Where only visible gold is worked, and all else rejected, it is impossible to obtain satisfactory data upon this point of inquiry.

The yield last year, from grada and vein mining, was fifteen dollars per day for each man mining. I think this estimate too high, but figures are shown confirming it.

Estimates made by gentlemen fully capable of arriving at just conclusions, have estimated the average yield of the quartz worked in the mortar to be $120 per ton. The refuse from these veins have given us $30, $36, and even $100 per ton. No test has been made on a large scale—20 lbs. is our limit. It is evident that the vein-stuff worked must be very rich to pay for hand-pounding on stones, pestle-working and dry amalgam, when wages are two dollars per day and board as much more.

In my next, I will describe the appearance of the veins, their anatomy, connection, system and richness, so far as known.

S.

Mariotte's Law in Mining.

Wilkesbarre, Pa., May 5, 1868.

Editor American Journal of Mining:

In your notice of this subject as given by Warington Smyth at the School of Mines, London, you do not do me or yourselves justice.

In my letter of the 22d January, published in your Journal of March 7th, 1868, page 146, you will find the principle entered into at length, and recommended to the practice of Engineers here, and, probably, before Mr. Smyth's notice of the subject in England.

J. W. Harden.

The Physical Properties of Petroleum.

The physical properties and caloric power of American petroleum have been investigated by M. Henry Deville, who has just communicated his results to the Academy of Sciences. We shall now only notice one important point established. M. Deville shows that Pennsylvanian petroleum increases in bulk by one-hundredth of its volume for every ten degrees centigrade of heat. This, the author points out, is a fact to be considered when storing petroleum for fuel in steam vessels, where it will necessarily be exposed to a higher temperature. Space should be left in the casks to allow of this expansion, or they may burst and give rise to an explosion. Another source of danger on board ship—and, as dealers and speculators in the article well know, a cause of great loss—is the power petroleum has of penetrating wood. The loss and the danger, however, may both be obviated by paying over the interior of the casks with a strong solution of glue or albumen. This, when dry, forms a coating impermeable to the oil. There are other solutions used for the same purpose, but nothing, we believe, answers better than glue, although M. Garnier states that he can send petroleum about safely in paper bags saturated with a preparation of his invention. M. Deville makes the recommendation, quite unnecessarily we think, that the lighter oils should be distilled off when the petroleum is intended for fuel.—*London Mechanics' Magazine.*

Turquoise Mine.

In addition to its silver mines, Nevada may soon become celebrated for its precious stones. The Reese River *Reveille* of the 27th ult., gives some account of the gem called turquoise, and of a turquoise mine existing in the Columbus district. The turquoise stone is susceptible of high polish and is much esteemed by connoisseurs of precious stones. The choices specimens are of pale blue with the faintest tinge of green; but in turquoise of an inferior kind the green predominates. In Persia this gem is most highly prized and the choicest specimens are obtained there. Little attention has, as yet been paid to this deposit, but judging from the fact that several specimens, varying in size from a small shot to an almond, have been discovered, it is not improbable, as the *Reveille* remarks, that a small amount of labor might be generously rewarded.

Quicksilver Mines in Italy.

In Tuscany there are four mines of quicksilver, but at the present time three have been abandoned on account of the low price obtained for this metal. The only mine now worked is that of Siele, near Castelazara. The quantity of ore extracted in 1864 was 3000 quintals (300 tons), which yielded from 2 to 2½ per cent. of quicksilver—about 6,000 kils. Quicksilver is also found in the neighborhood of Agordo, in the Venetian provinces. The veins of sulphide of mercury are said to be most extensive, but are worked on a very small scale. The following is the annual produce of quicksilver in Italy:

Mines.	Quintals.	Value.
Castelazara	3,000	3,600 francs.
Agordo	44,608	53,000 "
SMELTING WORKS.		
Castelazara	66	34,200 "
Agordo	230	91,840 "

From 1863 to 1865 the imports of quicksilver were 10,900 kils., of the value of 17,100 fr.; and the exports 1,000 kils, of the value of 2,700 fr.

Personal.

Mr. A. E. Mathews, who is probably well known to many of our readers in Colorado and Montana, is engaged upon a book, which promises to illustrate and describe the wonderful, beautiful and startling productions of both nature and man, in those territories in a style that will not only reflect great credit on his own ability, but which will, judging from the artistic merits of the proof-sheets before us, compare favorably with the most lauded productions of a similar kind that have been issued in this country. We have a counterpart of the profile of the "Old Mountaineer," at Fall river, South Clear Creek, Colorado, which is a freak of nature that completely outdoes the old man of the White Mountains, inasmuch as he has not only an "eye for to see," which the other has not, but hair on the top of his head in the very place where the song says it ought to be. The views of Pike's Peak, Long's Peak and of the "Monuments near Monument Creek," remind us that American tourists need not go outside of their own domain for beautiful scenery, and that the self-satisfied inhabitants of the European Continent have reason to fear lest we soon entice their ramblers also to the great West.

Sidney Tuttle, assayer for the Montezuma Smelting Company's Works, in Humboldt district, Nevada, and connected with the company from the commencement of its operations, is on his way East for a short visit to his friends in New York. The *Register* says that he carries with him good reports of the mines and mining interests of Humboldt, and will be able to point to substantial realities. During the absence of Mr. Tuttle, Mr. F. C. Perkins, late of the Golconda mill, will act as assayer for the company.

Mr. O. J. Hollister was recently at Cheyenne, this we are sure of, but the statement made in our columns a few weeks ago, that he had disposed of his interest in the Colorado, *Miner's Register*, needs contradiction. The publishers of that paper have taken pains to inform us that he never had any kind of interest in it other than editing during the absence of the regular scribes.

M. Senure, Professor of the University of Ghent, has just made a valuable discovery, having found, in one of the libraries of that city, the *livre d'heures* of the Emperor Charles V. This volume commences with a prayer to God which seems to have been drawn up by the monarch himself. Then comes canticles in prose and verse, moral precepts, philosophical maxims, and sanitary rules for each month of the year.

Prof. E. P. Evans, of Michigan University, the accomplished translator of Stahr's Lessing, is now busily engaged in writing an Epitome of the History of German Literature. The work is to be written in the German language; and, while it will be of service to the general reader, it is intended especially as a text-book for students of German.

Mr. E. P. Hollister, of this city, has recently opened a handsome banking office at 64 Wall street, opposite the Custom House, on the first floor. Mr. Hollister is the sole agent in this country of the well-known English-American bankers, Balding, Keith & Co. His ability is equal to his courtesy, and both are unsurpassed.

Mr. Hermann Goschen, of the firm of Fruhling & Goschen; and Mr. A. Charles de Rothschild, of Rothschild & Sons, have been elected directors of the Bank of England, in addition to twenty-two other gentlemen who have served before.

Judge Caton, of Illinois, is said to have accumulated an estate of $1,500,000 since 1852, in the telegraph business. His franchises in Illinois, Iowa and Minnesota have been leased to the Western Union Company at a rental of $90,000 a year for fifty years.

J. Hammond Trumbull, of Hartford, Ct., is said to be the only living person who can read John Eliot's Indian Bible, a copy of which was recently sold for $1,130. He has compiled from the book a dictionary of 7,000 words.

Sir Morton Peto and Mr. Lawrence Oliphant have resigned their seats in the English House of Commons.

Mr. Dickens' visit, it is said, netted him about $100,000 in gold, his expenses having been about $50,000.

Peter Kimberly has bought the Atlantic Iron and Nail Works at Sharon, Pa., and will soon start them up.

John Leisenring, Superintendent and Engineer of the Lehigh Coal & Nav. Co., has resigned.

Gov. Woods has made his journey overland from this city to Portland, Oregon, safely.

Patent Claims.

Interesting to Miners, Millmen, Metallurgists, Oil-Men, and Others.

77,183.—Amalgamator.—Stephen Fountain, Silver City, Nevada.

I claim casting the pan with a hub, having an opening through it for the shaft to pass through, and having a double wall around this opening to form a steam chamber for supplying heat to the machine, substantially as described.

77,202.—Pan for Concentrating Sulphuric Acid.—Paul Marcelin and Joseph Saunders, Green Point, N. Y.

We claim providing a pan for concentrating sulphuric acid, with a partition or partitions, *a*, reaching nearly to the bottom of the pan substantially as and for the purpose herein shown and described.

77,240.—Quartz-Crusher.—Benjamin Babbitt, New York, N. Y.

I claim, 1. The toggles C, provided with or connected to the shoes C', in combination with the slides E, and rubber or other springs F, all arranged to operate in the manner substantially as and for the purpose set forth.

2. The securing of the periphery or shell *u* of the roller J' to its shaft, *g*, by means of the India-rubber heads *r r*, expanded by the fixed collars *q*, loose collars *o*, and the nuts *t*, or their equivalents, all arranged substantially as and for the purpose herein set forth.

3. The eccentrics *d d*, applied or arranged in relation with the slides E of the toggles, substantially as and for the purpose specified.

Special Scientific Brevities.

☞ M. Richard, ceramic manufacturer at Saint-Christophe, near Milan, has communicated to the Society of Encouragement, Paris, in the most disinterested manner, his process for varnishing pottery, and applied by him to different products exhibited at the Champ de Mars (group III., class XVII., Italian section). The following are the ingredients and their proportion to be fritted: Carbonate of soda, 1·600; boracic acid from Tuscany, 0·800; kaolin, 0·125; carbonate of lime, 0·250; sulphate of lime, 0·250; crystallized felspar, 0·750; quartz from the Tessin, 0·280; fluate of lime, 0·100. Manganese of Piedmont is added to obtain the desired tint. The whole grit is

ground fine, and then mixed with 110 parts of kaolin and 52 parts of felspar for every 460 parts of the above frit. It is applied as usual in glazing, but, as the specific gravity is less than the leaden coating, the same weight of the new glaze will cover a greater quantity of pieces.

☞ **M. Gillot, in his memoir to the French Academy of Sciences** on the carbonization of wood, says the only condition essential for the production of good charcoal is that the operation shall proceed slowly. The decomposition of wood commences at about the boiling point of water. During the decomposition, the production of carbonic acid causes a development of heat in the retort greater than that outside of it, when the heat applied approaches 300° C. Too rapid an increase of internal heat gives rise to tar and gaseous products, diminishing in a corresponding degree the useful accessory products, as well as the yield of charcoal. The condensed products contain the largest proportion of acetic acid (about 48 per cent.) when the temperature of the oven is 218° C. In this way a given amount of wood will yield about two-thirds its weight of charcoal and 7 or 8 per cent of acetic acid.

☞ **Professor John Gregory, of Milwaukee,** writes to the *News* of that city that the beds of Lake Superior and Michigan are periodically upheaved by igneous action. He says: "As there is no reason why this internal igneous force should communicate at equal intervals of time, we cannot expect a recurrence of the above phenomenon at the end of equal periods. Our rivers show ample evidence of this up-heaving force, as they are all of considerable depth for some distance from the lakes—a condition of things that could not exist under any other circumstances than that of an up-heaving force—which would necessarily drive back the elevated surface waters into the rivers, just as we see them at different points where the rivers discharge themselves into the lake."

☞ **Barytes, if ever so white, will not make so permanent a** white paint as sulphate of baryta prepared artificially. Kuhlmann & Wagner's process is as follows: The native sulphate is at first reduced to sulphide of barium by calcening, in iron crucibles, four parts, ground to a fine powder, with one part of powdered coal and from five to eight per cent. of coal tar. After the process has continued for several hours, the mixture is removed from the crucibles, and re-calcined in a closed furnace to prevent any oxidation. When cold it is treated with hydrocloric acid, the liquid being kept alkaline to prevent the admission of other metals, and from the chloride of barium thus obtained, by means of sulphuric acid, is precipitated the permanent white.

☞ **Dr. E. Drechsel has achieved a triumph in synthetical** chemistry by producing the oxalate of soda by means of carbonic acid. A mixture of pure sodium and dry sand is heated in a flask to about 350° C., over which a stream of dry carbonic acid is rapidly passed. After a few hours the metal becomes red and ultimately black. To avoid the reduction of the carbon the heat should be moderated in the latter part of the operation, and the whole slowly cooled. Left in the air to oxidize, and then exhausted with water, about one-tenth of the mass is found to be oxalate of soda. In the same way oxalate of potassa may be obtained from an amalgam containing 3 per cent. of potassium.

☞ **According to the *Athenæum*, M. Galy Cazalat has invented** a process to be employed in casting steel, so that tilting is rendered unnecessary. The mould is made of the greatest possible strength, and is provided in its upper part with a chamber in which a quantity of inflammable powder is placed. When this powder is ignited an immense pressure is exerted upon the surface of the steel, the molten metal is thereby forced into every minute portion of the casting, expels the gases contained in the steel, and causes the metallic particles to be brought into the most intimate union.

☞ **An artesian boring near Geneva, Switzerland,** to the depth of 142 feet, and at an elevation of 1,600 feet above the level of the sea, showed an increase in heat at the rate of 1° Fahr. for every 55 feet; while another at Mondorff, in Luxemburg, which penetrated to the depth of 2,394 feet, gave an increase of 1° Fahr. for every 57 feet.

☞ **According to H. Baumhauer, when the clean surface of** either potassium or sodium is exposed to the air, oxidation is sufficiently rapid to produce an evolution of light.

All Sorts.

☞ **For testing the relative value of various oils used as machinery lubricants,** there is, as far as we know, no perfectly reliable instrument in existence. Until a recent period the specific gravity alone has furnished a guide in determining the value in this respect of standard oils, but of late years the nearly interminable variety of oils that have been introduced, causes the test to be nearly useless. An English patent has lately been granted for a new apparatus, constructed on the principle that the best oil is the one which allows the greatest number of revolutions to be performed by a shaft with the least possible increase of temperature of the bearings, and that all others may be graded on a descending scale as to value, according as they fail to approach the standard.

☞ **For welding iron and steel a composition has lately been** patented in Belgium, consisting of iron filings, 1,000 parts; borax, 500; balsam of copaiva, or some other resinous oil, 50; and salammoniac, 75. They are mixed, heated, and pulverized. The process of uniting the iron and steel is as usual. The parts are heated to a cherry red, covered with the preparation, brought together, again heated and welded.

Another composition for the same purpose is 15 parts of borax, 2 of salammoniac, and 2 of prussiate of potash. Being dissolved in water, the water should be gradually evaporated at a low temperature.

☞ **The catalogue of the University of Michigan for the current** year is published. The number of students at present in attendance is 1,223, divided as follows: Department of science, literature, and art, 415; department of medicine, 418; department of law, 387. In the literary department the students are divided as follows: Resident graduates, 13; seniors, 48; juniors, 48; sophomores, 87; freshmen, 104; in mining engineering, 8; in selected studies. 59; in higher chemistry, 51. The whole number of degrees conferred last year in all the departments was 292.

☞ **Greek fire is not so dangerous as is represented.** It consists of phosphorus dissolved in bisulphide of carbon. When thrown upon any combustible material the liquid rapidly evaporates, and the phosphorus, being left in a comminuted condition, bursts into flames, evolving suffocating vapors of phosphoric acid. Water will only temporarily extinguish the flame, which bursts out again when the water dries up; but the fire may be immediately and permanently extinguished by a solution of common washing soda—one pound to a gallon of water.

☞ **In the darkest days of the Atlantic telegraph enterprise,** a friend of Cyrus Field's bought ten thousand dollars of stock for a ten dollar bill. Mr. Field offered to take the stock at a considerable advance. "Well, but what do you advise me to do, Mr. Field?" "Take your stock home," was the reply; "look it up in your safe, and never look at it or think of it till you come to me for your dividends on it." And that man is now receiving on his investment of ten dollars, eight hundred dollars per annum in gold.

☞ **The Philadelphia Academy of Natural Sciences has received** from Kansas the bones of an enormous reptile embedded in crystalized gypsum, and is now engaged in chiseling them out and putting them together. The vertebral column is over thirty feet long and the whole monster is believed to have been more than fifty feet in length. Professor Cope pronounces it a hitherto unknown species of saurian, but would perhaps, have difficulty in pronouncing the name he has given it, *elasmosaurus platyurus*.

☞ **The editor of the Lancaster (O.) *Gazette* has seen a fragment** of steel accidentally lodged in the eye, instantaneously extracted by a powerful horse-shoe magnet.

☞ **Secretrry McCulloch reports a decrease in our National** Debt of $18,680,859 80 during the month of April.

☞ **A Washington Territory company has been organized to** build a railroad from Walla Walla to Portland.

☞ **The work of grading the Oregon Central Railroad is pro**gressing at the rate of two miles per day.

☞ **"Stigmatipy" is the last new thing.** It is a mode of printing pictures from movable type, and has just been tried in Boston.

☞ **The men employed along the line of the U. P. R. R. west** of this are troubled by Indians.

Special Notices.

☞ On a recent visit to the extensive store of DAVIS COLLAMORE & Co., 479 Broadway, New York, we had the opportunity of examining many beautiful articles of porcelain and silver plated ware. The store, with basement, is a magnificent one, being 200 feet by 28 feet in its dimensions, and extending with one direct floor from Broadway to Mercer street. Words fail us to describe one fiftieth of all we saw and admired and curiously fingered. There were glass ornaments of all kinds engraved with crests and initials and monograms; beautiful ware of plain white china, Dresden china, English china, French china, and Chinese china. There were vases, lamps, flower stands—all elegant and unique; breakfast, dinner, and tea sets. of the most exquisite designs, superior to anything we ever gazed upon. We thought it impossible that food should ever taste insipid or appear uninviting in that splendid ware. But what have editors to do with Parian marble, Bohemian glass, classical statuary, or seducing punch-bowls. We felt almost awed into silent admiration as we looked at the vast array of dazzling ornaments; broke the tenth commandment as many times as there were objects to admire; wished, yes, ardently sighed, for riches, and walked away, feeling that if we only had some of those steel silver-plated knives such as are represented in DAVIS COLLAMORE & Co.'s advertisement; the pangs of hunger would be assuaged by the thoughts of using them during our hours of domestic retirement.

To all those of refined tastes we say, go, admire, select if you can, and purchase; in so doing you will encourage the useful and fine arts.

In another column will be found the advertisement of Messrs. EVANS & GOULD, bookbinders and printers, 117 and 119 Third avenue, New York. These gentlemen have done some difficult and delicate work for us; and gratitude compels us to say in their praise that not one of the twenty vexatious things which so easily beset bookbinders occurred to rouse our wrath. Our books were not kept so long that we forgot where we had sent them; diagrams and tables of contents were not misplaced; corners of leaves were not found turned up and made into deliberate dog's ears; the titles on the backs of the volumes—one of them, RITTINGER'S AUFBEREITUNGSKUNDE, was lettered; and, finally, the price charged was no more than fair. This notice is our comment of thanksgiving for an unusual blessing. How rarely does one receive volumes from a bookbinder without desiring to throw them at his head!

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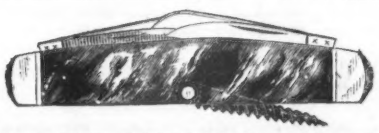

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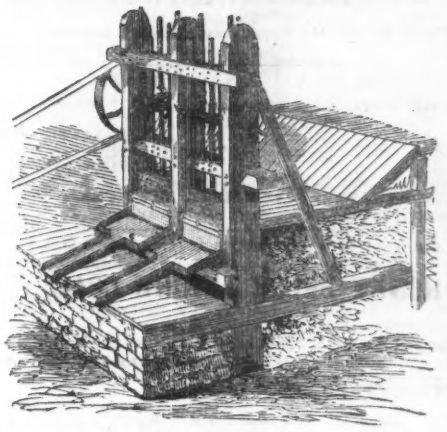

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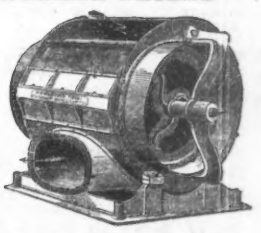

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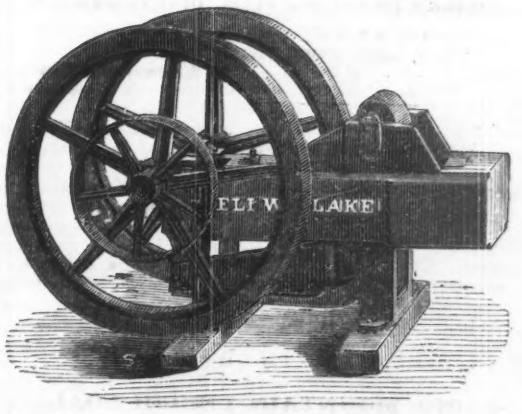

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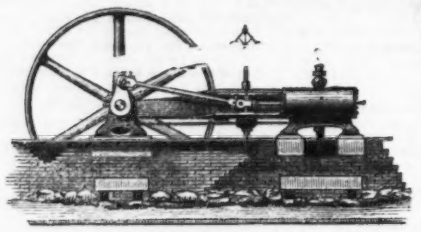

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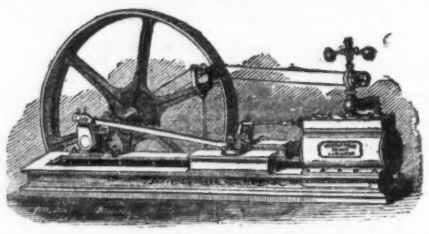

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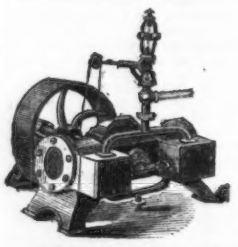

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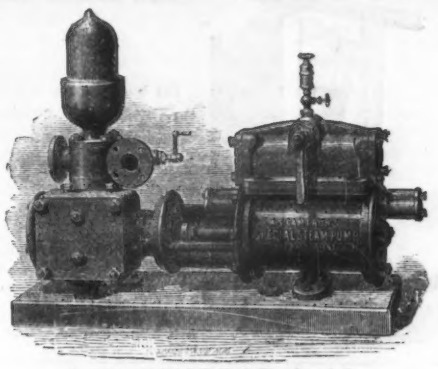

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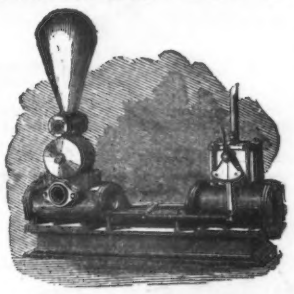

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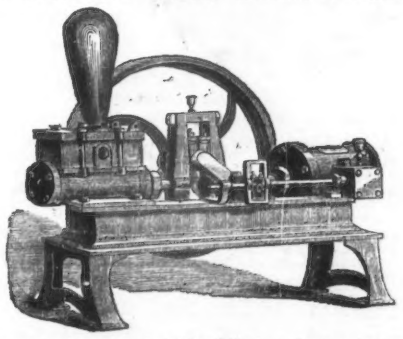

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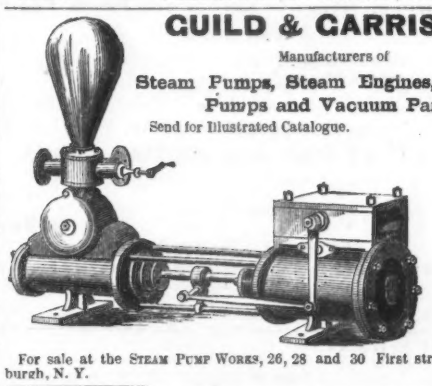

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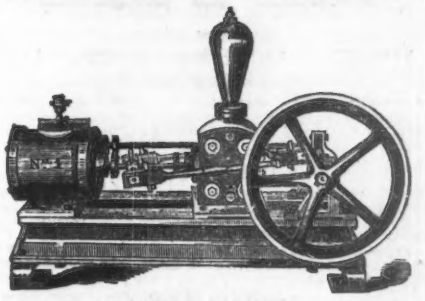

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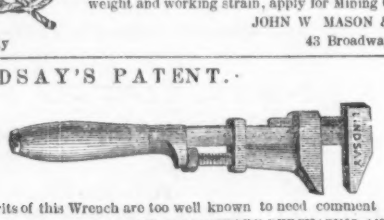

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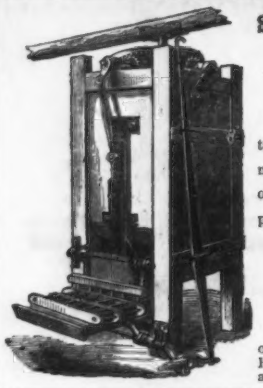

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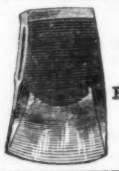

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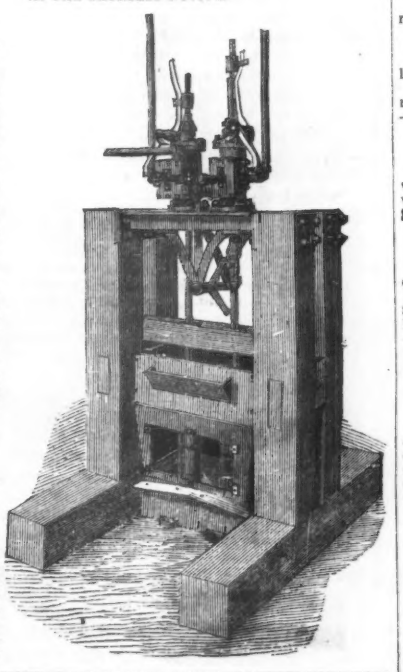

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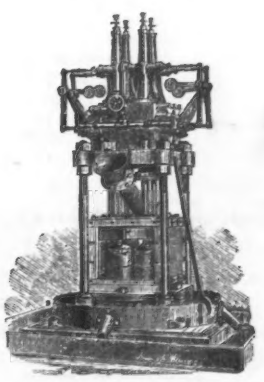

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Manufacturing and Mechanical Notes.

No. XVIII.

Railways and Engines.

The smallest practical railroad curve is an arc of a circle whose radius is 720 feet. Consequently a railroad would have to be nine-elevenths of a mile long in order to make a complete circle. A railroad embankment must be three times as thick at the base as its perpendicular height. In other words, the slope, in order to stand without sliding, must not be more than about thirty degrees from horizontal. The highest embankment in the world is on one of our Western roads, 240 feet, with a base 730 feet thick.—*Ex.*

ENGLISH EXPRESS ENGINES.

The Great Northern Railway of England, have recently put upon their lines several engines specially designed for running the heavy express trains on that line of railway. These engines have recently completed the journey from King's Cross to Peterborough, a distance of seventy-seven miles, in one hour and twenty-eight minutes, although they had to contend with heavy gradients for forty miles of the distance, and with twenty carriages behind them. The leading dimensions of these engines are as follows, viz. :—The driving and trailing wheels are 7 ft. in diameter, and coupled together; the leading and tender wheels are 4 ft. 3 in. in diameter throughout; the barrel of the boiler is 10 ft. 1 in. long by 3 ft. 10 in. in diameter inside in the smallest part; the fire-box casing is 6 ft. 4 in. long by 4 ft. wide outside; the cylinders are 17 in. in diameter, with a stroke of 24 in.; the heating surface in box is 114¼ square feet, and in the tubes 907 square feet, making a total heating surface of 1,021¼ square feet, with a grate surface of 19¾ square feet; the tender holds 2500 gallons of water and two tons of fuel; the propelling power of the engine is equal to 12,000 lb., and the adhesion on the rails may be taken at 11,700 lb.—*Boston Railway Times.*

COMBINED ENGINES AND PUMPS FOR COAL-CUTTING MACHINES.

Messrs. Carrett and Marshall, of Leeds, England, have brought out a combined pair of engines and four pumps, which have been successfully applied in the working of their patent hydraulic coal-cutting machines. One of the engines intended for the Weardale and Sheldon Waterworks, combines economy and adaptability to various purposes, including the work of dip-level pumps in mines. The following is a description of the engine, with four pumps, all fixed in one bedplate, for working coal-cutters, water-works, &c. :—"This combined engine and pump, of 30 horse power, is all fixed, self-contained, on one plate, and independent of foundations. It is designed and constructed to force a continuous stream of water, at 500 lbs. pressure, to any required distance. The steam-cylinders are 14 in. in diameter and 20 in. stroke, and the four ram pumps 6 in. in diameter each and 12 in. stroke. The cranks are at right angles, and the engine, where preferable, can be made to condense. This apparatus is used in coal mines, to force water any distance along the workings, or expel it to the top of the shaft. This pressure of water, besides working coal-cutters, can be further used in various distant places to work pumps in dip levels, and to turn rotative hydraulic power for winding, &c. The pressure can further be adapted to force the waste water out of the shaft. This arrangement of engines and pumps is, with larger pumps, now being fixed at Shildon, for the Weardale and Shildon Waterworks, to force 350,000 gallons 470 feet high in 24 hours. It is a compact, simple, and effective arrangement for this and other purposes, and costs only about 500*l.*"

No. XIX.

Boiler Inspection.

In the large manufacturing City of Manchester, England, there is an association with DR. WILLIAM FAIRBAIRN as President. This gentleman has expended much money, time and study in scientific pursuits. He has instituted, and superintended numerous and complicated experiments on the strength of iron, and boiler plates, the application of steam, and the form of steam-engines; in addition to the supervision of his own very extensive steam-engine works, he has found time to write some excellent books of practical information for engineers. A recent annual report of the Manchester Association states that during the past year one of the largest colliery companies in the country, appreciating the value of independent periodical inspection, enrolled with the Association the entire number of their boilers, amounting to 150; and, also, that the boilers in the War Department of Her Majesty's service, in use at Woolwich Arsenal and other places, and amounting to 146, have been placed under its inspection. Applications from abroad are constantly being received for information respecting the Association, and for copies of its reports, with a view to the formation of similar institutions in the countries from which the applications come. Some time ago very full information was furnished, in answer to enquiries from the Master of the Calcutta Mint, and an Act for the Inspection of Steam-Boilers in that place was passed by the Government, which adhered very closely to the plan of inspection adopted by this Association. More recently similar information was supplied in answer to enquiries from Ballarat, Australia.

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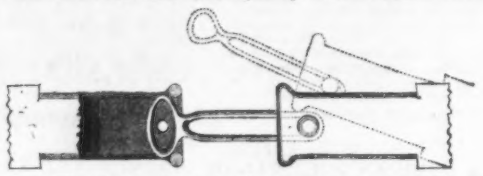
In this country aim to give every boiler under its supervision a careful inspection at least once a year, by a competent inspector, who makes constant internal inspections, and thus by pointing out weak and dangerous points, explosions must be frequently prevented. Such Associations and Companies *pro bono publico* should receive a liberal patronage.

Railroad Car Coupling.

We have had recently a more than average number of railway accidents. Some of these were, of course, caused by carelessness, others by a direct disobedience of orders on the part of employees, and others by the bad condition of the road and rails. The late Erie disaster has alarmed some minds into a comprehension of not only the importance of good rolling stock, but also of the need of couplings between passenger cars that will, by their instantaneous action, mitigate at least the horrors of railway catastrophes. The objects of the improvement illustrated by our engraving are to enable the cars to be easily coupled when brought together, and also to be instantaneously uncoupled in case one of the cars should get off the track, and consequently swerve from a direct



course. The device shown by the engraving is certainly very simple. A wrought iron coupling bar, forged with a transverse elliptical link, bears upon the two extremities of one of the draw-heads, and keeps in its place so long as the cars are on the track; the other end is held by a simple bolt. Should a car be thrown off the road, or upset by a broken rail, &c., the coupling is turned immediately into an angular position, and the opening in the draw-head being diagonally larger than the elliptical portion of the bar, the latter slips out and clears itself from the adjoining car. The engraving represents one of the draw-heads with the upper portion removed, in order to show the manner in which the coupling is placed when in running order; an exterior view of the other draw-head with the head of the bolt that is put through the bar, will be easily comprehended.

The dotted lines show about the position that the coupling bar would take in case the car was thrown from the track and got disconnected. The advantages claimed for this simple device are, that, should a car get off the track, other cars are not pulled off with it; it is easily adjusted by first passing the small end of the elliptical link into the draw-head, after which it cannot be pulled out by any strain in a direct line, and of course, will yield slightly in motion when the cars are on a curve of the road. The invention for which a patent has been applied, presents no claims for the prevention of accidents, but certainly in its adoption would tend to diminish the amount of destruction and the loss of life, too prevalent at railway accidents. Messrs. F. & F. A. Dana, of 67 Wall street, New York, have taken a deep interest in this invention, and all further information concerning it, may be obtained from this firm.

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An Artesian Well and Subterranean River.

In sinking the second and last artesian well at the Chicago stock yards, three distinct veins of water were encountered. The first vein was struck in the thick bed of limestone following the second shale, and yielded about 15 barrels an hour. After passing this stream no water was seen until the 90 feet of limestone under the first sandstone had been reached. In this rock a very extensive spring, flowing at the surface of the well about 65,000 gallons a day, was opened. The third and large vein was struck in a bed of hard limestone, 1,190 feet from the starlight. The following table will show the depth from the surface at which the several strata commence, and the beds in which streams of water were found. Water was not found at the depths indicated, but was in the rocks which commenced at those depths:

Distance from surface.	Nature of rock.
Beneath surface of earth	Hardpan.
40 feet	First limestone.
300 feet	First shale.
400 feet	Second limestone
420 feet	Second shale.
550 feet (first water)	Third limestone.
877 feet	First sandstone.
1,010 feet (second water)	Third limestone.
1,100 feet	Last limestone.
1,130 feet	Sand and limestone.
1,160 feet	Same, but harder.
1,172 feet	Last limestone.
1,190 feet (third water)	Same.

The vein from which the greatest supply of water was obtained appears to be about eight feet in depth, so fas as can be ascertained by sounding. The current is a very strong one, and is apparently passing from the northwest to the southeast. This fact was ascertained by lowering into the bore, by means of a fine wire, a long lead plummet. The weight would descend steadily until it reached the stream of water, when it would instantaneously be snatched or jerked ont from the perpendicular line from the direction indicated. In relation to the velocity of the stream, one of the attendants explained that it was "about the swiftness of a catfish." The experiment with the plummet explains this remark. The current of water is sufficiently strong and rapid to snatch the heavy lead, and bear it away, as a fish would snatch an insect, and carry it beneath the surface of the river. The water in the wells presents a marked and singular difference. In the old well it is strongly impregnated with sulphur. So thorough is the impregnation, that the water not only smells and tastes of the substance, but deposits it profusely at the bottom of the trough in which it is received, and the tank in which it is collected. After exposure to the air for a few hours, the sulphur is precipitated and partly carried off by the air, leaving a perfectly colorless and tasteless fluid. In the second well, on the other hand, there are no sulphurous evidences; but the water is strongly charged with one of the oxides of iron. It has no perceptible odor, but chalybeate characteristics are very apparent to the taste; and to the eye, in the iron-brown deposit which covers the bottom of the receiving trough. The force of the water of the last well is sufficient to discharge 600,000 gallons a day at the surface. In carrying itself to the height of the tanks, an altitude of 45 feet from the ground, it loses so much force that only 450,000 gallons are discharged at this point daily. It is estimated that at a further height of 130 feet, being 175 from the surface, the water would assume a stationary position, and would readily obey King Canute or "any other man," if he told it to rise no farther. The wells are both now in running operation at the stock yards. They are the only means used in the supply of the immense amount of water there constantly required, and prove highly successful in every respect.—*Chicago Times.*

New Chemical Discoveries.

Dr. Hoffmann announces the discovery of a new acid which bears the same relation to napthaline that acetic acid bears to marsh-gas. A few weeks ago the same eminent chemist communicated to the Royal Society the discovery of "the mustard oil of the ethyl series".—*Mechanics' Magazine.*

IN our last week's issue, we give an interesting list of new and important books for practical men. They have been recently published by HENRY CAREY BAIRD, of Philadelphia. Many of these books should be in the hands of miners, engineers and mechanics, and comparing the price of them with others, we consider the rates very reasonable. We have in our library some of the works named in the advertisements, and know well how valuable they have proved to be on many occasions. Mr. BAIRD furnishes all applicants with a descriptive catalogue of 56 pages, 8vo, which is sent free of postage.

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